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United States Pavilion

AT THE KNOXVILLE INTERNATIONAL ENERGY EXPOSITION • FINAL REPORT







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KNOXVILLE INTERNATIONAL ENERGY
EXPOSITION
1982

FINAL REPORT





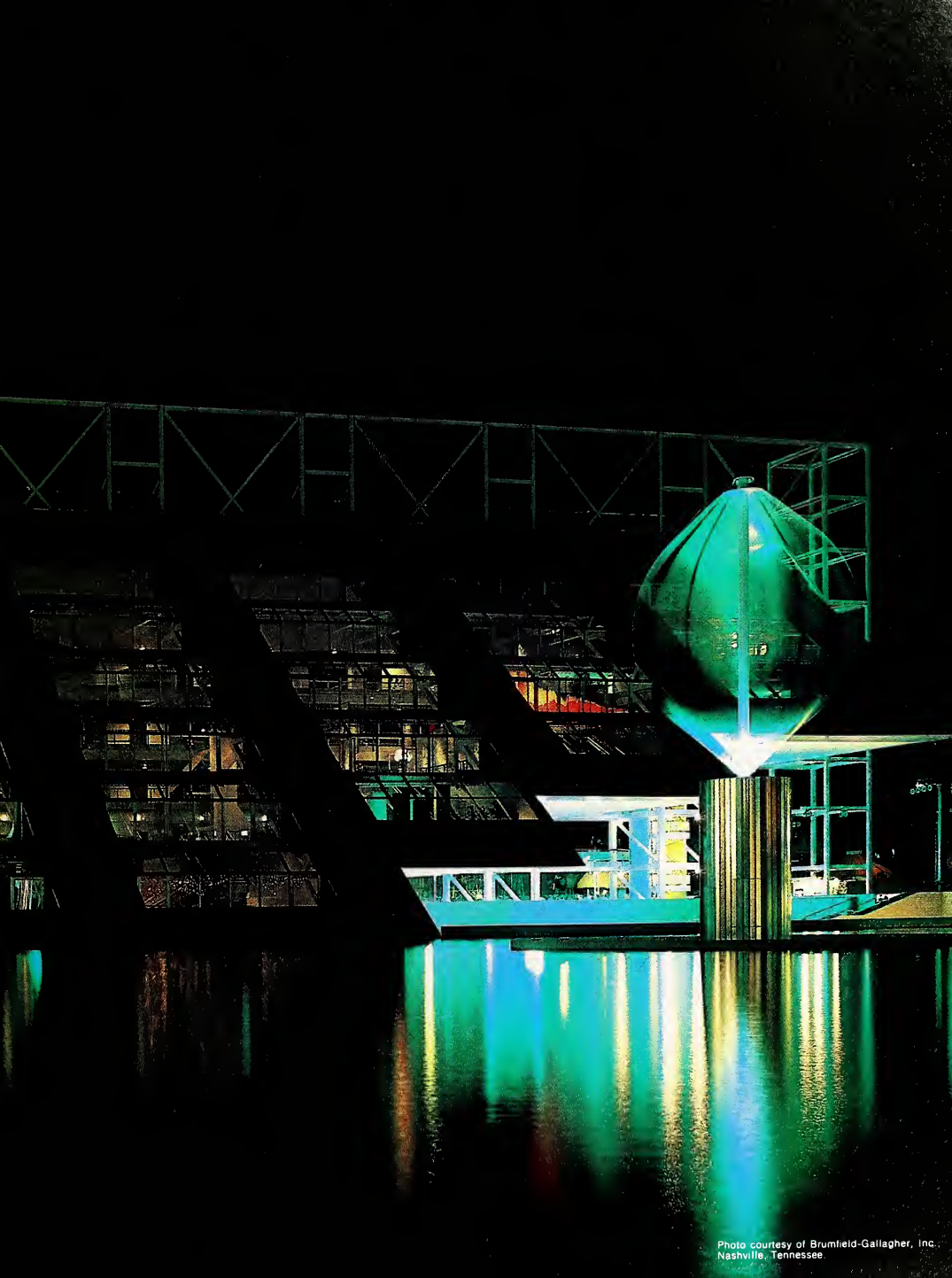


Photo courtesy of Brumfield-Gallagher, Inc.
Nashville, Tennessee.



Malcolm E. Baldrige
Secretary of Commerce



Joe M. Rodgers
Commissioner General of the
United States Section



**The United States
Commissioner General
of Section**

U.S. Department of Commerce

The Honorable Malcolm Baldrige
Secretary of Commerce
U.S. Department of Commerce
Washington, D.C. 20230

Dear Mr. Secretary:

It is with pleasure that I submit herewith the Final Report of the United States Pavilion at the 1982 Knoxville International Energy Exposition for your personal benefit and for forwarding to the President and to the Congress.

The United States Pavilion was the highlight of the 1982 World's Fair and was well worth the effort put forth. The image of the United States as a leader in technology was portrayed, but most importantly our staff and the facility played the outstanding role as leader in the promotion of good will among nations. I am convinced that many people from around the world feel much closer to the United States because of the untiring effort of the U.S. Pavilion staff in making our foreign visitors feel welcome. This dedicated group of mostly non-career government employees, in particular Al Beach, performed in an outstanding manner to accomplish a very difficult assignment. I cannot speak highly enough of their contribution to the success of the U.S. Pavilion.

The report will show that when this Administration came into office the overwhelming odds were against the success of the Knoxville International Energy Exposition and, to some degree, the United States Pavilion. Both the Fair and the Pavilion were a great success because of the tremendous assistance given by you and the entire staff of the Department of Commerce, and, in particular, Bill Morris, George Pratt, Lyle Ryter, and Ron Eberhardt. Also invaluable were the roles played by Senator Howard Baker, Ambassador William Brock, former Secretary of State Alexander Haig, and former Secretary of Energy James Edwards and his staff. Of course, the President himself and many on the White House staff were unstinting in their support. I cannot overly stress the foregoing.

I was honored to be selected to serve as the Commissioner General of the United States Section at this international event, and I appreciate the opportunity to serve my country.

Sincerely,

Joe M. Rodgers

JMR/sr



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DOC	—	U.S. Department of Commerce
BIE	—	Bureau of International Expositions
DOE	—	U.S. Department of Energy
GSA	—	General Services Administration
IAWG	—	Interagency Working Group
COTR	—	Contracting Officer's Technical Representative
CM	—	Construction Manager
PA	—	Public Affairs
GMP	—	Guaranteed Maximum Price

Interior United States Pavilion at
Knoxville International Energy
Exposition 1982

Photo courtesy of James Carmel

* Commissioner General of Section—Commis-
sioner General for the U.S. Pavilion

I. PREFACE

The award-winning United States Pavilion and exhibits at the 1982 Knoxville International Energy Exposition (KIEE) was, by all standards, an unqualified success. It ranked favorably with such outstanding U.S. Pavilions as the ones in Brussels in 1958, Montreal in 1967 and Osaka in 1970. It was the centerpiece and the pace-setter at the Knoxville Fair as well as one of the Fair's major attendance attractions. The exhibit held strictly to the energy theme, containing displays and live shows that educated, informed and entertained. It told the story of the past, present and future of energy in the United States utilizing state-of-the-art computer/video technology and climaxed with a film, produced especially for the Fair. The structure won awards for design, with its sloping glass roof and spectacular cantilevers. Six million people visited the U.S. Pavilion during its 27-week run, May 1 to October 31, 1982. There was something for everybody.

The entire project stayed well within its budget showing unobligated balances both in the congressional appropriation and the Gifts and Bequests Fund.

The image of the United States as a leader in technology was reinforced, and the goal of furthering international friendship and understanding was actively pursued. Over 8,000 guests from many walks of life and many parts of the United States and the world were hosted in the Pavilion's special guest lounge, including nationally and internationally renowned leaders in business, politics, science, sports, literature and the arts.

The report that follows will attempt, in narrative, charts and photos, to portray not only the successes and accomplishments, but the problems in the planning, erecting, installing and operating the U.S. Pavilion at the Knoxville Exposition. Files and records along with individual reports of the staff were combed and compressed in order to report the most salient milestones in the progress toward the completion of this mission.



II. THE FAIR

Category

The Knoxville International Energy Exposition was a "special" category exposition, approved by the Bureau of International Expositions (BIE), which is a treaty organization made up of member states, vested with sanctioning authority for all international expositions. The United States joined the BIE in 1968.

A "special" category exposition has a limited or single subject theme, devoted to one branch of human endeavor. The host organizers of a "special" exposition must provide exhibition space or pavilions for the guest nations. The participants then lease the space from the organizers. In the Knoxville exposition, the host country provided its own pavilion.

Fair Theme

The BIE General Provisions of the General Regulations set forth the title of the exposition: "Knoxville International Energy Exposition—Energy Expo '82." The theme of Energy Expo '82 was "Energy Turns the World," focusing on the impact of energy production and use on the lives of the world's people.

The stated purpose of the exposition was "to offer citizens of the world a greater comprehension of the effective use of energy and energy resources in the physical field and more discriminating appreciation of creative energy in the artistic field."

Setting

The U.S. Pavilion's 4½-acre site was in the southern portion of the 77-acre elongated Fair site. The 400-foot long pavilion dominated the Fairgrounds and could be seen from nearly all locations in the Fair as well as from many vantage points outside the Fair. Because the long and narrow pavilion nearly bisected the Fair site, the bottom "leg" of a rough figure-eight Fairground's circulation pattern passed along the Pavilion's broad east-west concourse between the Pavilion and the above grade portion of the theatre. The U.S. Pavilion site became a part of the main-stream of traffic. The Pavilion's north face bordered the "Waters of the World" reflecting lake. The Fairgrounds was constructed on the site of a nearly unused railroad yard which cut a large swath between the City's downtown and the University of Tennessee.

The population of the City of Knoxville is 183,000. The Knox County population numbers nearly 320,000 and the metropolitan area, serviced by Knoxville, exceeds 475,000. The University of Tennessee has an average enrollment of 30,000.

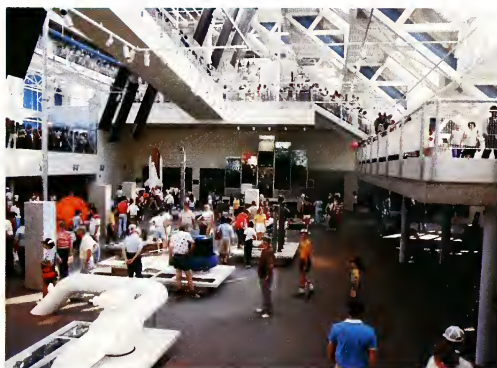
The Fair Organizers, in projecting an 11 million Fair attendance, took into account that 52 million people live within a 400-mile radius of Knoxville. In addition, Knoxville is located one hour's drive from the Great Smoky Mountains National Park which averages 9 million visitors a year.

International Participants

International participants in the Fair were Italy, France, the Federal Republic of Germany, the United Kingdom, the European Community, Japan, Australia, Mexico, the Royal Kingdom of Saudi Arabia, the Republic of Korea, Canada, the Hungarian People's Republic, the People's Republic of China, the Republic of the Philippines, Egypt and Peru.



View of U.S. Pavilion



View of Pavilion exhibit levels from ground floor.

Sunsphere from U.S. Pavilion

III. UNITED STATES PARTICIPATION

Legislative and Executive History

In April 1977, the President informed the Secretaries of State and Commerce that Federal recognition had been granted to the Knoxville International Energy Exposition, based on fulfillment of the provisions of Public Law 91-269 (which implements United States treaty obligations to the Bureau of International Expositions) and on the recommendations of the Secretaries of Commerce and State. On April 27, 1977, the BIE officially registered Expo '82 as a Special Category International Exposition on Energy.

In December 1978, the President issued a proclamation directing the Secretary of State to invite such foreign countries as he might consider appropriate to participate in the Knoxville International Energy Exposition. Public Law 96-169 was enacted on December 29, 1979, to provide for Federal participation in the International Energy Exposition to be held in Knoxville in 1982. This law authorized the President, by and with the advice and consent of the Senate, to appoint a Commissioner General of the United States for the exposition. It also provided for the Secretary of Commerce to designate a Commissioner General of Section who would serve as the Director of the United States Pavilion. On July 8, 1980, Public Law 96-304 was enacted authorizing \$20,800,000 for designing, constructing and operating a Federal Pavilion in the Knoxville International Energy Exposition.

THE WHITE HOUSE

PROCLAMATION 4628

Knoxville International Energy Exposition of 1982

By the President of the United States of America

A Proclamation

In May 1982, a six-month International Energy Exposition will open in Knoxville, Tennessee, inviting the nations of the world to think anew of man's relationship with the pervasive force of energy which fundamentally shapes the choices people have as to the endurance and enjoyment of life itself. This exposition, whose theme is "Energy Turns the World," will provide a splendid setting in which to explore new technologies to conserve energy, to harness the long-lasting and most renewable sources, and to carry on the search for new sources of energy.

Because of the opportunities which the Exposition offers for a deeper understanding of energy issues and for the stimulation of trade and cultural exchange, this Administration is moving to extend the fullest possible recognition to this event in accordance with Public Law 91-269. On April 26, 1977, I advised the Secretaries of State and Commerce that the Exposition warrants Federal recognition as provided by statute. On April 27, 1977, upon request of the United States, the Bureau of International Expositions officially registered the event as a Special Category exposition by unanimous vote.

Also, in accordance with law, I shall appoint a United States Commissioner General to exercise the responsibility of the United States Government for fulfillment of the Convention of November 22, 1928, Relating to International Expositions, as modified, and to invite the several States of the Union to participate.

NOW, THEREFORE, I, JIMMY CARTER, President of the United States of America, in further recognition of this International Energy Exposition, do hereby authorize and direct the Secretary of State to invite, on my behalf, such foreign countries as he may consider appropriate to participate in this event.

IN WITNESS WHEREOF, I have hereunto set my hand this sixth day of December, in the year of our Lord nineteen hundred and seventy-eight, and of the Independence of the United States of America the two hundred and third.



Interagency Committee

Under Public Law 91-269, the Department of Commerce was designated the lead agency to plan official Government participation in major Federally recognized expositions in the United States. To carry out this mandate, the Secretary of Commerce, in May 1977, requested Federal Agencies with "substantial interest in achieving a successful Federal Pavilion and exhibitions" to

designate Agency representatives to an Interagency Working Group on Expositions (IAWG). The purpose of the IAWG was to provide for full government support and a coordinated effort for the Federal participation at the Knoxville International Energy Exposition in 1982. A major task of the IAWG was to participate in planning the theme of the exhibits in the Federal Pavilion, as well as the residual

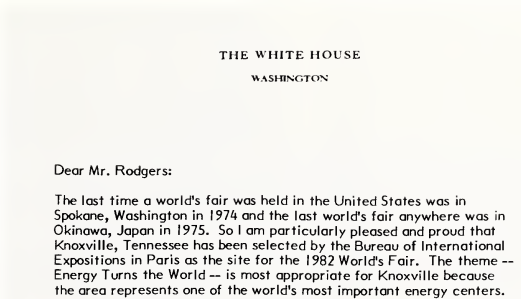
use of the building. The IAWG first met on July 13, 1977 and subsequently played an active role in the development of the United States Pavilion. The IAWG established an Exhibit Review Committee and participated in the Architect-Engineer and Exhibit Design and Film Selection Board. The IAWG also reviewed fine-cut versions of the film prior to its acceptance for presentation. (See Appendix for IAWG Members.)

Selection of Design Team

The architect, exhibit designer and film-maker final selection process was initiated in May 1979, with the appointment of a selection board. Prior to this, in December 1978, the design project was published in the Commerce Business Daily, requiring offers to reach DOC by January 1979.

After several changes in membership, a selection board was ultimately organized, composed of eleven members representing the Department of Commerce, General Services Administration, International Communications Agency, University of Tennessee, National Park Service, National Endowment for the Arts, Smithsonian Institution and Haworthy and Anderson Consultants.

From an initial field of 51 architect/engineer, exhibit design and film-maker joint-venture groups, five firms were given grants of \$5,000 to develop their designs and enter into active competition. An architectural and engineering (A/E) firm in joint venture with an exhibit designer and film-maker, ultimately won the



THE WHITE HOUSE WASHINGTON

Dear Mr. Rodgers:

The last time a world's fair was held in the United States was in Spokane, Washington in 1974 and the last world's fair anywhere was in Okinawa, Japan in 1975. So I am particularly pleased and proud that Knoxville, Tennessee has been selected by the Bureau of International Expositions in Paris as the site for the 1982 World's Fair. The theme -- Energy Turns the World -- is most appropriate for Knoxville because the area represents one of the world's most important energy centers.

The United States Pavilion, approved by Congress last year, is already under construction. Many countries have agreed to participate and numerous American corporations are making plans to present their philosophy, their technology and their commitments to future progress.

I support this idea of a world's fair in Knoxville. I hope to be there to open the fair officially in May of 1982. I believe this fair will focus the world's attention on the importance of energy conservation and the uses to which creative energy can be applied.

Fairs like this have historically provided a focal point around which progress is noted and plans for the future dramatically expressed. The 1982 World's Fair in Knoxville promises to continue that great tradition.

Sincerely,

Mr. Joe M. Rodgers
Commissioner General of Section
1982 World's Fair
Suite 210
1010 Wisconsin Avenue, N.W.
Washington, D.C. 20007

competition. Before final contracts were awarded, the Department of Commerce requested separate contracts for each company in the group, thus breaking up the joint venture but allowing closer supervision of each participant. The A/E was given a letter contract on February 1, 1980, to continue preliminary design work. The final contract was not entered into with the A/E

until July 1, 1981. Likewise, on September 2, 1980, a letter of agreement was given the exhibit designer with final contract signed on October 19, 1981. The film-maker letter was signed on August 1, 1980, and a contract signed on June 18, 1981. A letter contract for computer/video content production was signed December 7, 1981, with a final contract signed April 16, 1982.

IV. OFFICE OF THE U.S. COMMISSIONER GENERAL OF SECTION

The United States Government, as the host nation in a Fair approved by the Bureau of International Expositions, is required to appoint two Commissioners General, each with distinct areas of responsibility.

The U.S. Commissioner General for the Fair is appointed by the President to represent the Government in matters of protocol and relations between the participating governments and the Fair Organizers. The U.S. Commissioner General also serves as the chairman of the College of Commissioners General, made up of Commissioners and Deputies of all official foreign government pavilions. The Commissioner General assists and advises the Organizers in expanding international participation, working closely with them in offices at the Fair's executive headquarters. During the Fair, the U.S. Commissioner General acts as the President's envoy in all official ceremonies.

The U.S. Commissioner General of Section, the section reserved for the official U.S. Pavilion, is appointed by the Secretary of Commerce. The Department of Commerce is the agency responsible for



(From left) U.S. Pavilion Commissioner General Joe M. Rodgers, Mrs. Rodgers, Mrs. Testerman and Associate Commissioner General, Kyle C. Testerman.

implementing the appropriation made available by Congress to assemble and operate a U.S. Pavilion. The Commissioner General of the U.S. Pavilion, with offices in the Pavilion, has the responsibility of overseeing all matters related to the Pavilion and staff. The Commissioner General of Section, or designate, sits as a member of the College of Commissioners General and represents the U.S. Pavilion at official ceremonies and other functions.

In August 1980, Charles E. Fraser was appointed the U.S. Commissioner General for the Fair. Because the Commissioner General of Section was

not scheduled to be appointed until later, the staff of the U.S. Pavilion and the U.S. Commissioner General shared offices. The U.S. Commissioner General acted as an interim Commissioner General of Section, guiding its early planning and operations and assisting in key staff selections. The Fair Organizers at that time were having difficulty in securing both private and international participation commitments. In March 1981, Joe M. Rodgers was designated the Commissioner General of Section and Pavilion Director. He added to his immediate staff Charles T. Hagel as his Deputy.

Their principal efforts were initially devoted to strengthening the Fair Organizers' campaign to broaden private participation. This allowed the U.S. Commissioner General for the Fair and his staff more time to concentrate their efforts on the Fair's international program and the College of Commissioners General. As a result, the number of international participants and private participants increased.

Allen E. Beach, then Assistant Commissioner General of Section and Deputy Pavilion Director, had been employed in the late fall of 1980. In July 1981, due to the critical need for a senior officer in Knoxville, he transferred to the Pavilion field office. The Deputy Commissioner General managed the Washington, D.C. Pavilion Office in Georgetown until his departure in September 1981 to accept a senior Federal appointment. Daily coordination of the Georgetown office activities was then divided between the Assistant Commissioner General in Knoxville and Dr. George L. B. Pratt, Director of the Office of International Expositions, in the main Commerce Building, until February 1982, when all Pavilion staff, except the Administrative Officer and Budget and Fiscal Officer, moved to Knoxville for the duration.

In March 1982, Commissioner General Rodgers named Kyle C. Testerman of Knoxville the Associate Commissioner General for the Pavilion,

to act in a voluntary capacity as a protocol and ceremonial advisor, and simultaneously named Beach Deputy Commissioner General.



U.S. Pavilion Commissioner General Rodgers chats with Robin Beard, former Congressman for Tennessee, at reception in the lounge.

Guest from Saudi Arabia registers in U.S. Pavilion lounge. (Left) Patti Wilson, U.S. Pavilion staff.



V. CONSTRUCTION

Design Development

Authorization to construct a U.S. Pavilion at the Knoxville International Energy Exposition, granted by Public Law 96-169, specified that "the Department of Commerce build a pavilion which would preserve and enhance, to the greatest extent practicable, the utility of the property for public purposes, needs or other benefits following the close of the exposition." The law expressed Congressional desire for a permanent building that would have lasting residual usage.

One of the principal reasons the A/E member of the design group was selected was because of the firm's concept for solution to the residual use requirement. The design

proposed a large open volume which created a pleasing ambience for exhibits while allowing for internal construction of new floors after the Fair. The design called for building only the floor space required for exhibit use but with the volume needed for reuse.

Construction Budget

The appropriation legislation for the Pavilion was not passed until July of 1980, when Congress provided \$20,800,000 to supplement the \$500,000 budgeted for initial planning phases. \$12,000,000 was for the construction cost including fees and construction related services. This eventually rose by about 5%.

Early in the planning stage, cost had been estimated at

\$25 million for Pavilion design and construction, exhibit design and fabrication, and administration and operation. However, prior to this, in October 1977, the President informed the Office of Management and Budget (OMB) that the Federal involvement should be \$20 million. With the passage of time, DOC officials recommended that the \$20 million figure be increased to about \$24 million due to inflation between the time of the initial estimate and actual start of construction.

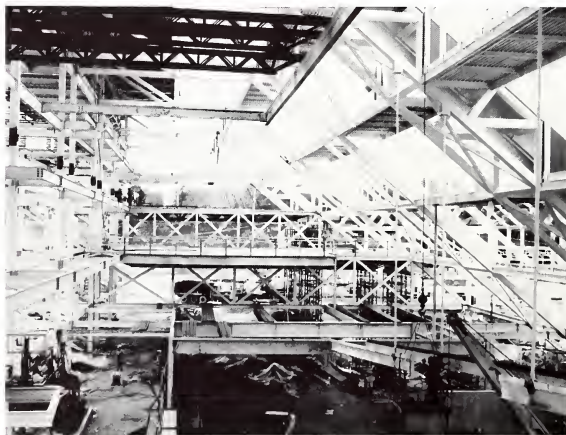
In May 1979, DOC submitted a budget proposal to OMB of \$24.3 million:

Design and Construction	\$12.0 million
Exhibitory and Related Costs	8.0 million
Operation, Administration and Miscellaneous Costs	4.3 million
	<u>\$24.3 million</u>

Later, the Government reduced the request to \$20.8 million, adhering more closely to the President's recommendation. The budget for the Pavilion was adjusted to reflect this total:

Design and Construction	\$12.3 million
Exhibitory and Related-Costs	4.5 million
Operation, Administration and Miscellaneous	4.0 million
	<u>\$20.8 million</u>

Pavilion interior takes shape.





Interior view of north wall, ready for glazing

Cost Reductions

Exhibitry was adjusted to \$4.5 million, including a film production, while design and construction costs were increased by \$300,000; however, it became apparent that numerous changes had to be made to reduce the construction scope to stay within the appropriation as well as time limitations. Some of the principal cost reductions are listed below:

ITEM	COST ESTIMATE
Delete Glass Domes over Escalators	\$ 146,500
Delete VIP Entrance	50,700

Use Uninsulated "Trimwall" around Elevator in Lieu of "Foamwall"	11,800
Change Theatre Seats to Benches	10,800
Deduct Alternate Paint Finish on Metal Panels	21,000
Remove 20 Percent of Operable Glass on North and South Walls	22,700
Delete Power Tower (includes Research Costs)	886,500
Delete Biomass Generator	500,000
Modify Rooftop Solar Collectors	296,000
Delete Lighting Control	
Microprocessor	224,000

Delete Solar Shades	36,700
Modify Theatre from Underground to Aboveground	226,000
Delete Railroad Portal	41,000
Reduce Allowance for Exterior Lighting	56,000
Total	\$2,529,700

This reduction of over \$2.5 million from the original design and exhibit scheme necessitated a major change in the concept and philosophy of the U.S. Pavilion and content. The original scheme presented by the joint venture group had made the Pavilion as energy self-sufficient as possible. The

energy-self-sufficient scheme was commendable, and reflected the United States energy policy at that time, but would have been impossible to carry through, considering the time and monies available. The structure was also reduced from a gross square footage of over 100,000 to about 87,000 square feet. It was mandatory to the successful opening of the Pavilion by May 1, 1982, and the preservation of the budget, that these reductions be made, even at the risk of criticism.

Guests at U.S. Pavilion Topping Out Ceremony autograph "last beam" before it is hoisted into place.

Framing for glazing on the Pavilion's north sloping wall.



Criticism did result from the scheme change and scope reduction mainly by the Department of Energy (DOE) which had been represented on the IAWG from the beginning. The criticism was based, however, on a brief review, by in-house DOE architects, of a set of "pricing" drawings, meant only to show the scope of construction work. Most criticism was due to the incomplete nature of the drawings and most questions raised were adequately addressed. Moreover, many energy conservation and energy-producing elements of the original scheme still

remained in the plans. (See Energy Conservation Features under Operations.)

Pavilion Design

The A/E entered into a letter contract with DOC in February 1980, and through various changes in the original proposal, put together a definitive design. The final design featured a sloping north face built from insulated foam-filled steel panels and glass, faceted with alternating vertical, then sloped glass. The north slope allowed natural



Ceremonial "last beam" is hoisted in place.



Assistant Secretary William Morris, U.S. Department of Commerce (left), and U.S. Pavilion Commissioner General Joe M. Rodgers with guests at Pavilion Topping Out Ceremony.



Helicopter lifts roof solar panels in place.



Dewey Smith and Frank Weiskopf, Pavilion engineers, check progress.

light to fill the exhibit floors, yet minimized direct sunlight. This glass proved to be a mixed blessing, in that the daylight effect was dramatic and conserved energy, but it also led to problems with water leakage. The south side featured an exposed steel "cage" with inset escalators, stair towers, elevator shafts, balconies and office pods.

Eight pairs of spine trusses sloped from the vertical south facade. Four in the center of the building were supported; one at the east end and three at the west were cantilevered. The voids created by the cantilevers lessened the "barrier" effect of the long building by providing north-south, see-through vistas at

ground level as well as through the inside of the building because of the expanses of glass on both sides. The stepped, west-end cantilever sheltered an outdoor amphitheater.

Visitors approached the entrance to the Pavilion via the ground level concourse, then proceeded up open-air escalators, inside the "cage," to the fifth level where they entered from a balcony at the southwest corner above the highest cantilever. From the fifth level, visitors descended by stairs and ramps through the exhibits. The lowest exhibit level contained the theatre holding area and tunnel leading to a 1000-seat theatre. Exit from the theatre placed visitors back on the concourse at the original entrance level.



Construction on the U.S. Pavilion continues in the snow.

The cantilever design required extensive computer-assisted calculations and special structural features. The structural "cage" which makes up the southern facade supports the cantilevers. To help resist the loads the cantilevers place on the frame, special "post-tensioned" concrete diaphragms, at roof level and concourse level, were designed. The seven-inch thick, roof diaphragm runs the length of the building and extends forty feet from the back of the steel "cage" out to the sloping north face. The fourteen-inch-thick concourse diaphragm also runs the length of the building.

Distortion was designed into the structure so that during erection the building would deflect to a vertical position. All towers were erected out of plumb, canted backward as much as 1½ inches in the overhang and forward as much as 1 inch elsewhere.

The southern wall steel "cage" was anchored to rock by deep caissons. This

foundation was designed to resist the uplift forces on the cantilever, rather than having the foundation support weight from above, as is usual. (See Appendix for building statistics.)

Construction Management

The sponsors of the Knoxville International Energy Exposition were late in organizing a financial plan to ensure success. As a result, DOC delayed its request for authorizing and funding legislation until a plan was approved. The appropriation was thus too late to provide sufficient lead-time for Pavilion design and construction using conventional Government methods. The General Services Administration (GSA) was originally asked to provide DOC with contract administration, but declined due to their concern about lead-time. When funds were appropriated in July 1980, the schedule for design and construction had slipped 13 months. DOC was not organized for or experienced in construction administration of a project of this magnitude on a very limited

schedule. As a result, a construction management (CM) firm was retained to provide this service, and guarantee the Pavilion would open on time and within budget. Generally, Government construction projects are scheduled sequentially; the first phase is design. From a total design package, a lump sum contract is awarded. The compressed schedule for the U.S. Pavilion did not permit completion of total design prior to the start of construction. The Pavilion had to be built under a "fast track" schedule where design is started and construction follows closely behind designs as they come off the drawing boards. This process requires very close coordination between owner, A/E and construction manager.

Guaranteed Maximum Price

The CM, operating under a letter contract from October 1980 until September 1981, was originally to assume all risks for completing the project within a guaranteed maximum price (GMP), but under only a letter contract, with GMP not definitized, the contractor's fiscal incentives were weakened, and the risk onus would remain the Government's until the definitized contract was negotiated. The Pavilion staff urged the closing of the GMP contract and several negotiation sessions were held. During that time, a majority of the separate work packages were completed by the CM and sub-contracts let. Often when a package was over budget, the scope of the work was redefined or funds transferred from contingency funds or other

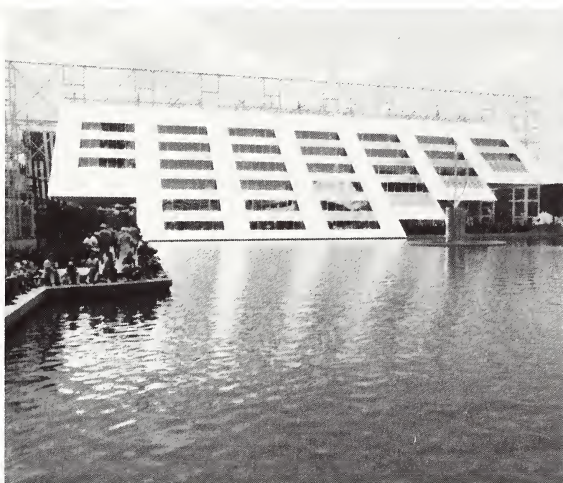
budget items to cover overruns, rather than the CM and A/E negotiating design and specifications changes to bring the price in line with the budget, which was the original purpose of retaining a CM. When the GMP contract was finally signed, construction was well under way, with nearly all bid packages finalized, thus the GMP contract became essentially a "fixed price contract" plus a known contingency for change orders. Once the contract was signed, contract administration consisted of tracking progress, negotiation and approval of change orders. There were a significant number of change orders due to the "fast-track" schedule, the unusual structure, changing requirements of exhibits and the use of donated materials.

However, despite the problems encountered, the A/E and CM presented the Government a pavilion which provided dramatic space for the exhibits, and attracted a very high percentage of the Fair attendance. Effective use of natural light and open space provided a pleasant atmosphere to visitors. The design brought two American Institute of Architect awards to the architects. The Pavilion was a popular success.

Sky Ride

The Fair Organizers contracted with a sky ride operator to erect and operate a ski-lift type passenger ride in two segments, running north and south nearly the length of the Fair site. The route of the segment at the west end of the U.S. Pavilion passed through

one of the structural steel frames on the outside of the building, adding a dramatic dimension to the ride. A license, allowing a connection of the overhead cable bogies to the steel frame and the erection of two support towers on the Pavilion site, was authorized by DOC.



View of north face of the U.S. Pavilion and "Waters of the World."

VI. EXHIBITS

Theme Development

In Fall 1977, the Department of Commerce retained a consulting firm to undertake the development of a theme for United States participation in the Knoxville International Energy Expo '82. In February 1978, the IAWG approved a theme statement which was published by DOC in a document entitled *Theme Development for the United States Participation in Energy Expo '82*. This document grew out of a preliminary, thematic development retreat held in Knoxville in November 1977. In attendance were representatives from DOC, the Department of Energy and the General Services Administration, as well

as Energy Expo '82 organizers and architects; and consultants from the KIEE Energy Advisory Committee, comprised of internationally recognized energy experts from Oak Ridge and the University of Tennessee. The purpose was to examine and identify a theme for the U.S. Pavilion and to provide a working direction for its planners, architects, exhibit designers, and implementers.

In June 1979, the Secretary of Commerce transmitted to the President the *Proposed Federal Participation in the International Exposition at Knoxville, Tennessee, May 1–October 31, 1982*. This document included the

February 1978 theme statement, "Energy and Us: Individually and Together for a New Tomorrow"—which was the theme adopted by the Interagency Working Group.

The Logo

The United States Pavilion logo was developed by the DOC Design and Graphics Division and the Pavilion Exhibits Section. The spherical symbol, with its five stripes of color, symbolized the major sources of energy examined in the exhibit. Red represented nuclear energy; red/orange—coal, oil and natural gas; ocher—biomass; yellow/orange—wind, water, and geothermal energy; and yellow—solar energy.



Time-Energy Curve "sculpture"

Conceptual Design

The exhibit design contractor, in association with the architect, presented a final conceptual description of the proposed U.S. Pavilion exhibit to the Secretary of Commerce, other Department officials, and members of the IAWG on March 10, 1981. The concept was also presented to a group of 50 corporate and industry leaders. The associated document, referred to as the "Blue Book," became the conceptual basis for the exhibit.

Design Options

A major goal of the United States Pavilion was to utilize state-of-the-art interactive computer/video systems in order to present a large volume of information while at the same time engaging visitor participation in the exhibit. This was an ambitious goal and one which could not be achieved under the available budget. The designer, working with the exhibit staff, produced a design plan with a number of gradations: its complexity and extent would depend on the amount of donated equipment which could be secured, as well as on donations to other areas of the exhibit and building, which would free up funds for the high option computer/video design.

Donations

A wide-ranging program to obtain loans and donations was begun with a major priority on computer/video equipment. Since no single company could

produce all the technology required for the envisioned system, the Government and the designer worked together to identify compatible equipment and ultimately secure loans. The interactive computer/video programs envisioned required random access, laser-read video disc machines and compatible computers to run the programs. The final equipment package contained 63 random access video disc machines, 71 monitors, 6 overhead video projection systems, and 23 exhibit computers (plus 13 for office use). To complete the complex interactive displays, loans for equipment were secured for the core memory system, for six color graphics generators and for 10 touch panels. The total of these loans was a dollar savings of over \$500,000. In addition, all companies donated packing, shipping, and free service on their equipment. This not only saved on service costs, but because of the companies' professional commitment to the project, the U.S. Pavilion exhibitry was 90% operational during the run of the Fair.

In order to stay within budget for the building and other parts of the exhibit, a wide range of other donations and loans were also solicited. Staff members and contractors identified items or services for possible loan or donation. Donations ranged from building items such as

paint, carpet, theatre seats, telephone system, and appliances, to services such as shipping for museum and industry artifacts. Financial contributions were also solicited to fund U.S. Pavilion special events and representation during the Fair. (See Appendix for a complete list of donors.)

Selecting a Fabricator

The selection of an exhibit fabricator took place in Fall 1981. The exhibit design contractor prepared the exhibit fabrication bid package which was sent out in response to 135 requests. A pre-bid meeting was held August 18, 1981. Following this meeting, and by the September 10, 1981, bid deadline, five proposals had been received. An evaluation team consisting of the Exhibits Director and five exhibits staff members ranked the technical portion of the proposals. Based on the technical evaluation and cost proposal comparisons, a fabrication firm was selected. The exhibit fabrication contract was signed November 2, 1981 for \$1,079,000 and covered 80% of the exhibit fabrication. The remaining fabrication costs were covered by contract amendment.

Obtaining Exhibits Artifacts

The United States Pavilion exhibit concept featured a large number of historical and industrial artifacts. The design contractor was responsible for choosing each artifact, identifying and locating a source, and getting preliminary agreement to loan the artifact for display in the exhibit. An exhibits staff member then contacted the potential lender to work out a formal loan agreement, if required; initiate DOC loan acceptance procedures; and arrange for shipping, insurance, and security for the item. In almost all cases, industry artifact lenders agreed to transport their artifacts to the Pavilion at no cost to the Government. The generous assistance provided by private industry contributed significantly to the success of the exhibit. The loaned artifacts plus the shipping, donated by a moving company, amounted to a combined donation equivalent to approximately \$325,000.

The U.S. Pavilion contained 120 artifacts, including the Gossamer Penguin, the first solar-powered airplane, loaned by the Southwest Museum of Science and Technology-The Science Place. The largest number of artifacts from one source came from the Edison Institute/Henry Ford Museum which provided 20 historical artifacts, including a 10,000 lb. portable steam engine dating from the middle of the last century. The Smithsonian Institution/National Museum of American History provided 15 artifacts. Other museum lenders

included The Chicago Historical Society, Georgia Agrirama and TVA—Land Between the Lakes. A significant number of historical items were borrowed from private individuals. (See Appendix for list of artifact lenders.)

Fabrication and Installation

Exhibit fabrication began behind schedule due to the lateness of the appropriation, with its resulting delays in construction and installation. The exhibits staff, the design contractor and fabricator were faced with a number of challenges. The exhibit conceptual and content development spanned two Administrations. To produce an exhibit that accurately reflected Federal energy policy, the exhibit design contractor retained an administration energy consultant as the prime exhibit content advisor. In a further step to assure factual and policy accuracy, it was decided to seek review and approval from the DOE for all exhibit text. The review amounted to over 900 pages of copy and over 6 hours of video tape masters for video disc production. Due in great part to the cooperation and assistance of DOE, a two-day turn-around for copy approval was achieved. This enabled the exhibit fabricator to adhere to a very tight production schedule.

In addition, the success of the donations program often meant additional effort for the U.S. Pavilion exhibits team and the fabricator and designer. The incorporation of loaned or donated items had to be decided on a case-by-case

basis. As donations of equipment materialized, the designers changed designs to accommodate the donation. This meant new detailed drawings and new consultation, resulting in slippage in the fabrication schedule. It is a credit to the fabrication contractor and to the coordination efforts of the exhibits staff that despite design changes, even during actual fabrication, delays in Pavilion construction, and recurring roof leaks, the entire task of shipping and installing 42,000 square feet of exhibits was accomplished in only a little over four months. Although the fabrication and installation period was frantic and exhausting, the exhibits were finished on time.

The Final Exhibit Product

The United States Pavilion and its exhibits were uniformly mentioned in press accounts and reviews as one of the major highlights of the Fair. Pavilion attendance, which routinely approached building capacity, was generally half of the total Fair attendance on any given day. The Pavilion visitor experience was enhanced by such elementary considerations as an air-conditioned atmosphere, especially appreciated during the hot summer months, and after some early exhibit placement adjustments just after opening, there was a smooth traffic flow with easy accessibility to exhibits; there were drinking fountains, restrooms, and a first-aid station. Some seating was available at various locations in the Pavilion for visitors to rest. The one drawback of consequence was a



First exhibits arrive at Pavilion loading dock.



Final touches before opening.

limited elevator capacity which, during peak attendance periods, caused some handicapped visitors minor inconvenience.

There were two major phases to the visitor experience at the U.S. Pavilion; the Pavilion exhibits and the large screen film presentation. A decision was made early in the project to use an innovative technology in the exhibit to communicate energy information to the public. Taking experimental technology directly from the laboratory to the exhibit floor, the U.S. Pavilion used interactive computer video systems to foster individualized information presentation and visitor interaction with the exhibit. The film presentation, following the same theme as the exhibit, used the large film image to convey the immense scale and dynamism of the energy scene to a large audience.

Walking Through the U.S. Pavilion

Visitors approached the Pavilion from both sides and walked along a wide promenade, from which they could view a portion of the Pavilion's interior through the glassed mid-portion of the wall. A series of escalators leading up through the open steel structure of the south face of the building moved visitors to the fifth-level entrance to the exhibit, while at the same time providing a panoramic view of the south end of the Fair site. (See Operations for conveying systems.)

LEVEL A

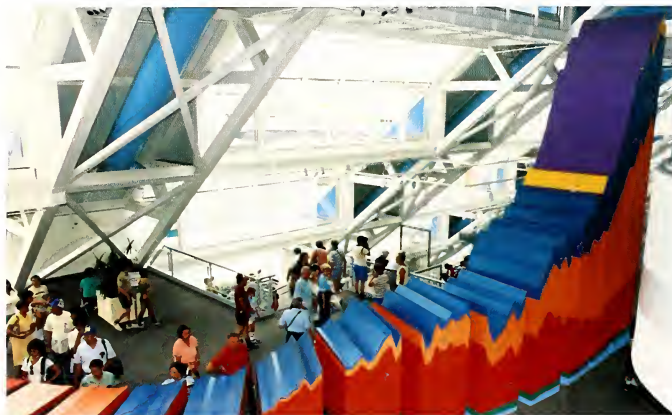
In the introductory level, the visitor viewed nine glass towers containing specimens of energy sources. A graphic wall introduced the nine color coded energy source symbols used throughout the exhibit. The

color code was used in the dramatic three-dimensional time-energy sculpture which depicted major energy events, the growth of energy use and the changing mix of energy sources in the United States from 1800 to the present.

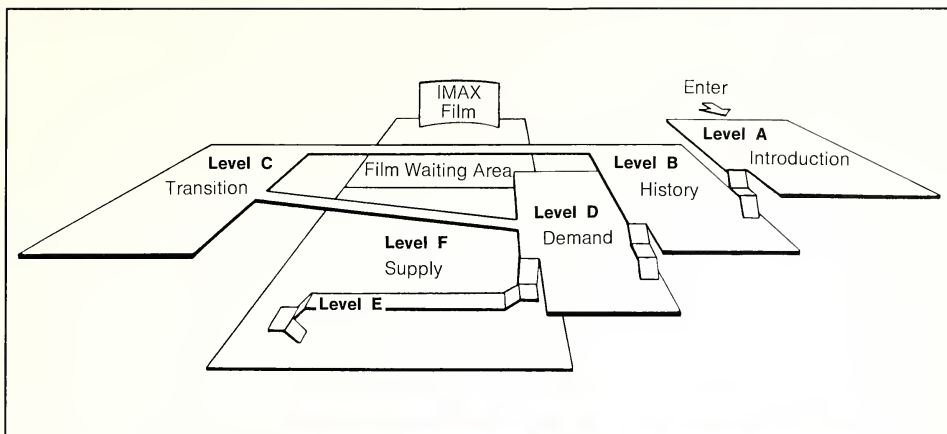
LEVEL B

From a general introduction to national energy production and use, the visitor descended to the next exhibit level devoted to history. Moving through a series of low platform clusters containing historical artifacts, graphic images and printed information organized by historical periods related to previous world's fairs, the visitor saw how energy influenced work, recreation, communication, travel, commerce and consumption. Six video towers brought the visitor up to date through the 1960's and 1970's, showing news clips on energy events, heightening awareness of the importance of energy in contemporary social, political and economic life. Each tower showed film segments on laser-video disc machines which were programmed to play the segments and loop back to continuously repeat.

Moving along a walkway to the next exhibit area, the visitor passed by the suspended Gossamer Penguin airplane, the first solar-powered airplane. The transparent airplane, suspended 40 feet above the bottom exhibit floor, was designed and built by Dr. Paul J. MacCready, Jr.



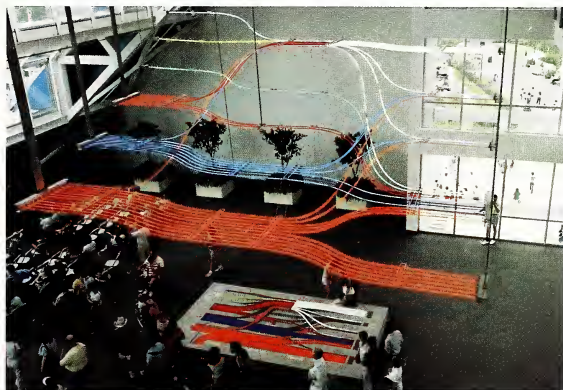
Time-Energy Curve



LEVEL C

The next exhibit area was dominated by two major exhibits. One was a color-coded energy supply and demand chart translated into a three-dimensional suspended neon sculpture. Just below, a keyed relief map presented more detailed information concerning supply and demand.

The second exhibit was a wall of 20 television monitors which made up the Energy Debate. Three microcomputers and floppy disc drives, five touch screens and 10 random access video disc players were used to produce a visitor-controlled debate. Using 80 video segments, featuring energy experts and energy-concerned citizens, each debate sequence lasted about 10 minutes. The segment began with a montage of energy pictures and films flashed across 20 wall-mounted television screens. A speaker giving an energy opinion filled the 20 screens. Then up to



View of "neon sculpture" matching supply and demand diagram below.

five faces of speakers with differing opinions appeared on certain screens. The first face touched by a visitor became the next debater and filled the 20 screens, to be followed by more optional speakers to be selected by the audience. This continued through 10 choices and then recycled to the opening montage and a new debate. The computer picked the alternatives and the visitor chose the speaker from that group of

alternatives. The computer kept track of who had spoken and presented choices in logical transition depending on where the visitors' choices took the debate.

LEVEL D

From the debate exhibit, visitors proceeded down an elevated ramp extending through the largest open volume of the Pavilion. At the end of the ramp they entered the



Visitors examine disassembled car showing new fuel conserving features.

"demand level." Visitors first viewed a transparent house whose plexiglas wall panels illustrated home energy conservation techniques. A second exhibit illustrated the energy required to make a variety of industry and agriculture products. This effective and popular exhibit used a multi-media approach combining interactive video-disc monitors, actual product samples, and visitor-activated touch panels. By touching a product symbol, the visitor could instantly call up a video segment which illustrated how energy was used to produce a given product. Further along, an automobile display illustrated improvements in energy efficiency, including improvement in aerodynamic engineering.

LEVEL E

Moving along a walkway one floor above the ground level, visitors were provided access to outside balconies overlook-



North Carolina's Governor James B. Hunt and Mrs. Hunt and son Baxter tour the pavilion with Anita Grinalds, U.S. Pavilion staff.



Visitors examine early steam engine in energy history exhibit.

ing the Fair to the North and the "Waters of the World" reflecting lake. Inside, visitors were offered a view of the bottom exhibit level devoted to energy supply.

LEVEL F

The nine major energy sources—coal, oil, natural gas, nuclear, hydro, geothermal, solar, biomass and wind—each had a dedicated display area. Each area featured energy source specimens, a piece of equipment used in the production of energy from that source and pictures and print information. A video tower with a touch sensitive screen featured energy terms specific to each of nine fuel options. The visitor touched a word on the screen to call up a definition; the definition could be text, text over a picture, or a film clip. Often a definition had key words in yellow. Touching

a yellow-highlighted word called up its definition. The program could continue branching through up to seven levels. Scrolling the screen brought up a new "page" of glossary from which to select words to be defined.

In addition to the nine energy video towers, 500 energy terms were incorporated into four systems displayed on the main exhibit level. Energy terms seemed to swoop out from the screen; by touching a graphic bar on the screen the visitor could speed up, slow down, stop and even reverse the movement of the terms. Touching a stopped term called up a definition. One video disc provided all the information for the system.

Along one wall of the bottom exhibit level, six computer/

video stations with touch-sensitive television screens and corresponding images projected on large television screens, presented a graphic rendition of the U.S. energy supply/demand schematic. Touching any of the supply or demand options on the graphic caused the display to go to video disc clips on the subject touched. Touching the screen during the playing of a video clip caused the display to branch to a more detailed clip of what was on the screen at that point. One-and-one-half hours of material was available on each of the six units in the Pavilion, and visitors could explore the subjects as far as their interest took them.

Live Energy Show

One of the most popular attractions in the Pavilion was the Live Energy Show, devoted to energy in the future. Oak Ridge Associated Universities (ORAU) was contracted to develop, fabricate and operate a live stage show to be presented on the bottom level of the Pavilion. ORAU was uniquely qualified to produce such a show since they had been doing traveling live energy shows since 1948 for government and industry. An inspired addition to the Live Energy Show was the robot, loaned to the Pavilion for the duration of the Fair, who soon became the Pavilion's most popular personality. Audiences for "The Robot Show," as it

was popularly called, usually numbered around 700. Shows lasted 10 minutes and were presented every 45 minutes.

The contractor developed an excellent and popular show which was operated through most of the Fair. When contract money for the show ran out, with six weeks to go until the end of the Fair, U.S. Pavilion guides took over presenting the show. This was a morale booster for the guides and they made sure that the Live Energy Show continued to live up to its well-earned reputation as an engaging, crowd-pleasing experience.



Visitors watch "Debate Wall."



Robot in Live Energy Show greets audience.

Visitors await start of U.S. Pavilion Live Energy Show.

Theater and Holding Area

The entrance to the 1,000-seat IMAX Theater was adjacent to the bottom exhibit level. Visitors, up to the 1,000 theater capacity, assembled in the theater holding area next to the souvenir shop. The 27-minute film was shown every 45 minutes, with 7.5 minutes allotted before and after the film for filling and clearing the theater, and 3 minutes for a security check. There were 16 shows a day, with an average daily attendance of 800. The total theater attendance for the run of the Fair was 2,296,644.

The waiting period to see the IMAX film usually did not exceed 45 minutes, even during peak visitor periods. If the theater holding area filled up, visitors would opt to leave the building through a series of doors on the east end of the bottom exhibit level and return later in the evening when attendance was lighter. While waiting to enter the theater, visitors could use a bank of telephones to call up energy tips provided by the Better Business Bureau and interact with glossary displays which featured information on energy terms. One wall of the holding area listed acknowledgments to the many sponsors to the United States Pavilion.

Theater attendants counted visitors, made sure visitors were evenly distributed in the theater, and gave a brief safety message on emergency exits and leaving the theater after the show. Visitors exited through doors at the top and back of the theater onto the concourse level.



IMAX film crew on location.

The theater achieved an excellent 98% operating reliability record. Much of the credit for the technical efficiency of the theater belongs to those behind the scenes. The diligence and expertise of the projectionists, combined with high quality projection and sound systems, and consistent equipment manufacturer and consultant cooperation, all contributed to this effort.

The Film

The movie "Energy, Energy" was an acknowledged hit of the Fair. Its popularity spread by word of mouth and through reviews of Fair attractions which appeared in the regional and national media. It was the feature of the U.S. Pavilion experience which received the most praise from visitors.

In tandem with Pavilion exhibits, the motion picture was deemed to be the most effective medium for furthering public understanding and conveying the United States energy

message. It provided a concentrated experience for an audience seated in a darkened theater, free from other distractions. The IMAX film format was chosen to convey the magnitude and scope of the energy theme.

The IMAX film process, with its peripheral screen and large film image exceeded the power of the standard 35mm or 70mm picture in its ability to move, entertain and inform its audiences. According to the film makers, one of the keys to the visual brilliance of the IMAX process is the large film frame. The larger the film frame, the better the picture quality. This system uses the largest film frame in motion picture history—ten times the size of a conventional 35mm frame and three times the size of a standard 70mm frame. The screen can also be ten times the size of a conventional screen. The screen at the theater in the U.S. Pavilion measured 93.5 feet by 66.5 feet.

A synopsis of the film was submitted in March 1981. The contract was signed June 15, 1981, for \$1,225,000. Principal photography for the film was scheduled for spring and summer of 1981, with the unique IMAX camera traveling to 23 states to photograph such contrasting scenes as midtown Manhattan, the Rocky Mountains, and the California sea-coast. In all, more than fifty locations of importance to the energy story were filmed.

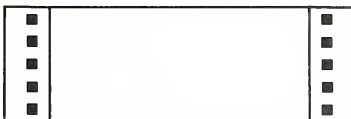
The film went through a number of screenings, beginning with a rough assembly viewing in October 1981. Subsequent screenings, to which the IAWG and DOC and other agency officials were invited, took place in Washington in November and December 1981, and in February 1982. The producers were present at all the screenings to answer questions and participate in the discussion sessions that followed. In addition, written comments solicited from attendees were used in attaining energy policy consistency in the film. Throughout the production process, the concept, the script, and the film footage were reviewed by the Department of Energy, as was all exhibit content. Though some changes were requested very late in the production process, most areas of difference were resolved. Most important, the audiences loved the film, appreciating both its content balance and entertainment impact, which reflected well on U.S. participation at the Fair.

Film Format Comparison

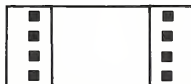
One of the keys to IMAX: the larger the film frame, the better the picture quality. IMAX uses the largest film frame in motion picture, history—ten times the size of a conventional 35mm frame, and three times the size of a 70mm frame.



IMAX
70mm, 15 perforations/frame
 $1.91'' \times 2.74''$, Area =
5.23 sq in
 $48.51\text{mm} \times 60.60\text{mm}$,
Area = 3376.30 sq mm



STANDARD 70mm,
5 perforations/frame
 $.870'' \times 1.91''$, Area =
1.66 sq in
 $22.10\text{mm} \times 48.51\text{mm}$, Area =
1072.07 sq mm



STANDARD 35mm,
4 perforations/frame
 $.825'' \times .600''$, Area = .50 sq in
 $20.96\text{mm} \times 15.24\text{mm}$, Area =
319.43 sq mm



STANDARD 16mm,
1 perforation/frame
 $.284'' \times .380''$, Area = .11 sq in
 $7.21\text{mm} \times 9.65\text{mm}$, Area =
69.58 sq mm

VII. PUBLIC AFFAIRS

Staffing

Staffing of the U.S. Pavilion Public Affairs (PA) Section began earlier than originally planned. Even with the previously listed reductions to keep within budget, funds for the presentation of a first-class U.S. Pavilion and exhibit were tight, and no funds had been appropriated for a Commissioner General of Section's discretionary use. This left the Office of the U.S. Pavilion's Commissioner General unable to sponsor courtesies that must be extended to special guests, especially from other nations, and with no means to reciprocate special courtesies and support extended to the U.S. Pavilion.

Because the pavilion of the host country is expected to excel in courtesy and diplomatic matters, it became apparent that additional funds were needed. The augmenting of a major U.S. exhibition's appropriation with private material donations, loans and cash, has been done in all past U.S. Pavilions, but was more urgent in this case because of the size and uniqueness of the Pavilion.

The number of guests requiring various levels of special treatment went beyond what was originally anticipated, so the duties of scheduling reservations and transportation was assigned to a guide who worked full time for the PA section. The original plan had called for guides to be assigned daily to the PA section as press aides, escort guides and limou-

sine drivers, and this program continued but expanded as needed to accommodate overload days. This often caused shortages in other areas of the Pavilion.

Before opening, in March 1982, the Commissioner General of Section, anticipating the need, designated a prominent local citizen and former Knoxville Mayor to act as an Associate Commissioner General to advise and assist in greeting and hosting special guests on behalf of the Commissioner General. This was a part-time, voluntary position but a valued addition to the Office of the Commissioner

General of Section and contributed greatly to the overall public relations effort.

Corporate Recognition Days

Planning for recognition of the corporations, organizations and individuals that had donated or loaned services, materials or funds to the U.S. Pavilion began with the compiling of lists, addresses, phone numbers, contact persons, and items donated. Exhibits officers worked with the PA Office in assembling this information. Once this information was compiled, each corporate donor was contacted to reserve a day at the Pavilion to recognize their contribution.



Corporations donating or loaning materials and services were pleased with the activities planned for them and numerous letters of gratitude were received. In addition to certificates of appreciation, corporate sponsors received the following: complimentary admission to the grounds; guided tours of the U.S. Pavilion and the film; souvenir packages; group reception in the U.S. Pavilion Lounge; public recognition at the U.S. Pavilion and in official publications; admission to the U.S. Pavilion & lounge when visiting the Fair on other than their recognition day; and official sponsor status for advertising and marketing with specified limitations.

Club '82

The Club '82 project was initiated to raise monies for the Gifts and Bequests Fund for use in recognizing corporate sponsors, hosting international guests and for other courtesy activities in the Pavilion. A list of prominent leaders in the Knoxville area was compiled and a letter from the U.S. Pavilion Commissioner General sent, asking for a \$1,000 donation. Although not as successful as anticipated, the response was good, with 24 members contributing. Passports to the U.S. Pavilion and lounge were mailed to each member. Four receptions were given for all members, and members were on the invitation list for other Pavilion events.

Commissioner General's Lounge and Activities

The guest lounge in a national pavilion at an international exposition serves as the location for diplomatic and courtesy functions. The commissioner general of a pavilion, as the senior representative of a government's exhibit participation, must have an area apart from the exhibits and general public, where domestic and international dignitaries may be received in an appropriate setting.

The U.S. Pavilion lounge was particularly unique due to the design and configuration of the structure. The lounge was situated on the sixth level with an open inside view to all levels



U.S. Pavilion Associate Commissioner General Kyle Testerman presents certificates of recognition to U.S. Pavilion corporate supporters.



Senator Paul Laxalt and Senator Howard Baker with U.S. Commissioner General Dortch Oldham.



of the exhibit. Through large windows or an outside balcony facing north, visitors were offered a spectacular view of the fairgrounds, the "Sun-sphere" theme tower and the "Waters of the World" reflecting lake below.

The lounge was staffed, managed and partially supplied by a generous corporate donation. (See Appendix for services donations.) A caterer was contracted, using monies from the Commissioner General's Gifts and Bequest Fund, to serve special receptions, luncheons and dinners. Pavilion souvenirs with the U.S. Pavilion logo, were obtained through donations, as well as purchases, using donated funds. A distinctive lapel pin with the Pavilion logo was designed and purchased. The "pinning" of guests became a pleasing ceremony.

Following USA Day, a series of informal weekly luncheons in the 6th level conference/dining room were initiated, hosted by the U.S. Pavilion Deputy Commissioner General.



Former President Jimmy Carter visits the U.S. Pavilion, escorted by Allen Beach, U.S. Pavilion Deputy Commissioner General and Jake Butcher (left), Chairman, and Bo Roberts (right), President, of KIEE.

Former Vice President Walter Mondale signs U.S. Pavilion guest book. Jake Butcher (left), Chairman KIEE.





General Carl Wallace
Tennessee National Guard, and
U.S. Pavilion Commissioner
General Joe M. Rodgers.



The Honorable James Edwards, U.S. Secretary of Energy, and
Mrs. Edwards tour the Pavilion with James Ogul, U.S. Pavilion
staff.



The French Pavilion sponsors luncheon for His Excellency, Bernard
Vernier-Palliez, Ambassador of France to the United States in the
Pavilion lounge.

U.S. Astronauts Hartfield and Mattingly visit U.S. Pavilion, with Edward Buckbee, Director, Alabama Space and Rocket Center.



W. K. Wiechers, Deputy Director of KEMA, Arnhem, the Netherlands (right) and Commissioner General of the EC Section Andries Ekker (center) is given guided tour by Emmett Cunningham, U.S. Pavilion staff.



Guests included the Fair's international community, the Fair Organizers and the U.S. Pavilion staff. Each luncheon was limited to twelve and funds for catering were drawn from the U.S. Pavilion's gifts and bequests funds. These events proved to be popular. International participants appreciated the opportunity to become acquainted with each other in an informal and relaxed atmosphere.

During each international participant's national day at the Fair, all staff, including guides, were invited to a U.S. Pavilion "open house." The U.S. Pavilion staff and guides on duty rotated to the lounge to greet and mingle with the guests.

The Pavilion lounge was also used for entertaining numerous national and international dignitaries. The Secretary of Commerce hosted a luncheon in the Pavilion dining room on Opening Day; the U.S. Commissioner General for the Fair entertained the Ambassador of Luxembourg, and the Fair sponsored a luncheon in the lounge for the Ambassador of France and an evening reception for the President of the Philippines. Former President and Mrs. Carter visited the lounge in October, as did former Vice President Mondale and party earlier. U.S. Pavilion Commissioner General Rodgers hosted several dinners, lunches and receptions for business, political and sports leaders, and Assistant Secretary William H. Morris held a reception for civic leaders of Tennessee.



Bob Hope and Mrs. Hope register in U.S. Pavilion guest book.

Printing and Publications

A great variety of printed material was needed prior to opening and particularly during the operations period. Costs for some of this material were charged against the Gifts and Bequests Fund.

Stationery and Envelopes

Office of U.S. Pavilion letterhead

Office of U.S. Commissioner General letterhead

Office of U.S. Commissioner General of Section letterhead

Guides Manual**Information Kits**

Pavilion rendering folder for informational inserts

Press kit folders

Press release paper letterhead

Invitations and Envelopes

Film preview day with RSVP card

Opening Day with RSVP card and gate pass

Commissioner General's Ball, USA Week, with RSVP card

Luncheon or dinner invitations: Secretary of Commerce;

Assistant Secretary of Commerce;

U.S. Pavilion Commissioner General, Associate

Commissioner General, Deputy Commissioner General

Brochures

Promotional brochure for lamp or tree donation and subscription card

"Energy Place" brochure

Certificates

Corporation recognition

Guides and staff appreciation

Entertainment appreciation



First Lady of the Philippines and Governor of Metro Manila, Madam Marcos is escorted through the U.S. Pavilion by Bo Roberts (left) President of KIEE and Emmett Cunningham, Pavilion Exhibits Director.



Allen Beach, U.S. Pavilion Deputy Commissioner General, presents Pavilion souvenir to the Hon. Robert Eaton (center) Minister, W.P., and Commissioner General John Powles (right), from Canada.



Canadian delegation representing the Vancouver Expo '86 pauses at U.S. Pavilion entrance.



The Honorable Patrick Reid (left) Commissioner General, Vancouver Expo '86, is greeted by U.S. Pavilion staff.



Senator Howard Baker, on one of his several visits to the Fair, tours the U.S. Pavilion with Pavilion staff.



U.S. Pavilion officers explain exhibits to His Excellency, Dr. Laszlo Kapolyi of Hungary, Commissioner General of Section and State Secretary of Industry (center).

Special Identifications

Club '82 membership card
Pavilion staff ID cards
Guest day pass/stickers

U.S. Commissioner General's Report

U.S. Pavilion Commissioner General's Report

The International Directory

During the last months of the Fair, the U.S. Pavilion undertook the production of an International Directory. The intention was to provide a memento of the Fair and a pictorial address book of the staffs of International Pavilions. In previous world's fairs this type of memento has been very popular and has usually been provided by the Fair Organizers. When it was apparent that the Knoxville Fair Organizers were not planning such a publication, the PA staff of the U.S. Pavilion took on the project.

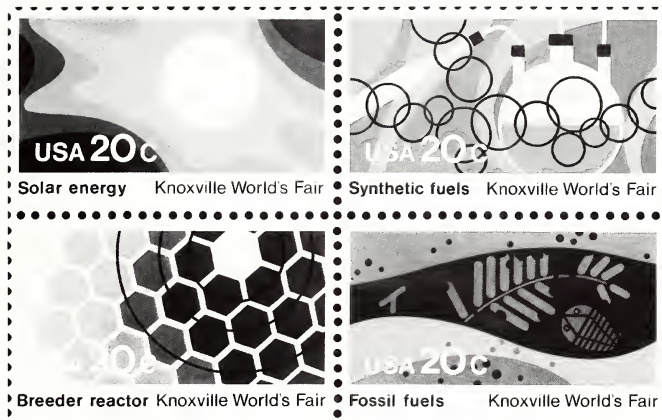
The Directory was given to staff members of all the International Pavilions and was well received.

Pre-Fair Activities

There were several major pre-Fair events arranged and managed by the staff of the Public Affairs Section of the U.S. Pavilion. The first was the Pavilion topping out ceremony held on October 22, 1982. Officials of KIEE, the Commissioner General of Section and Assistant Secretary of Commerce participated. The press attended and the ceremonial "last beam" was put in place.

Then, on Sunday afternoon, April 4, a party and preview of the U.S. Pavilion was hosted for the construction company employees and the U.S. Pavilion staff and families by the construction company, and the Sunsphere owners. Attendees toured the nearly-finished U.S. Pavilion. Pavilion staff was present to greet the guests and explain the building and exhibits.

The next major event was the official pre-opening screening of the film "Energy, Energy." Two hundred guests were invited including members of the Fair's international community and Fair officials. This was the first screening on the huge 6½-story-high screen. The reaction could not have been more gratifying; throughout the film, various scenes and sequences were applauded, and at the end the audience indicated its approval with a prolonged ovation.



First Day of Issue Stamp
Ceremony on U.S. Pavilion West
Plaza.

On April 29, the United States Postal Service held its "First Day Stamp Issue" ceremony on the "West Plaza," the Pavilion's huge outdoor area, located under the building's cantilevered floors and adjacent

to the Pavilion's fountain-pool. By law, an event such as this must be open to the general public. Special security arrangements involving KIEE and U.S. Pavilion Security Services were necessary.

The final pre-Fair event, and a "test-run" for Opening Day, was Press Preview Day, April 30. For this event, each of the U.S. Pavilion corporate sponsors and donors sent representatives to be available to answer questions from approximately 800 members of local and national media previewing the Fair. Press representatives toured the U.S. Pavilion, as the general public would do on the following day. Pavilion press kits were available at the 5th floor entrance where press representatives were greeted by uniformed U.S. Pavilion guides. Corporate representatives stationed themselves near their loaned or donated item to answer questions. In the evening, a reception was held in the U.S. Pavilion lounge for the corporate contacts who had been dealing with the Pavilion staff on a regular basis. Corporate CEO's received invitations to the KIEE Pre-Opening Gala at the Court of Flags and the Tennessee Amphitheatre. The evening ended with a party for 1,000 people sponsored by the KIEE in the Pavilion's West Plaza.

THE WHITE HOUSE
WASHINGTON

February 11, 1982

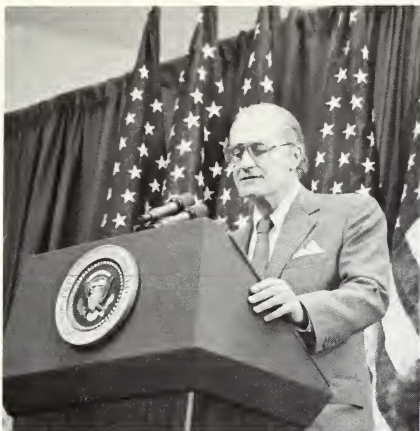
I want to extend a warm welcome to all of those visiting the United States Pavilion!

The timely energy theme of this World's Fair makes this a major event and guarantees each of you an exciting and stimulating experience. In this landmark structure you will explore the reality and the dream of the American energy story. The development of energy resources past, present, and future is depicted in a wide array of creative exhibits that are both enlightening and entertaining.

Innovative scientific and technological breakthroughs, new ideas for energy use by consumers, and imaginative ways for industry and commerce to deal more effectively with energy demands are all explained in terms that provide practical information for today as well as fascinating insights into the energy world of tomorrow.

The United States Pavilion stands as a symbol of America's commitment to the energy challenges of the future. I invite you to share that commitment as you view the progress that lies ahead in your visit here today.

Ronald Reagan



Secretary Malcomb Baldrige introduces President Reagan at the U.S. Pavilion dedication ceremony.



Omar Baldanado presents season tickets from his penny drive to President and Mrs. Reagan at Pavilion dedication ceremony.



U.S. Senator James Sasser (left) is introduced at Pavilion dedication: other platform dignitaries, U.S. Commissioner General Dortch Oldham, Senator Howard Baker, Secretary John Block, Department of Agriculture.

Opening Day

Opening Day, May 1, 1982, was the culmination of all the staff efforts in planning for the visit of the President of the United States. The Commissioner General of Section invited special guests to the U.S. Pavilion ceremony and to special seating areas at the Court of Flags for the Fair's official opening beginning at 11:00 a.m., followed by the Pavilion dedication at 1:30 p.m. The guest list for the Pavilion dedication included Pavilion corporate sponsors;

Federal, State and local officials; and KIEE officials and their families.

Detailed planning for Opening Day began in mid-April with the arrival of White House advance people to survey the Pavilion and Fairground routes for the President.

The first Opening Day activity in the U.S. Pavilion was an 8:00 a.m. breakfast reception for 1,000 invited guests. Meanwhile the U.S. Marine Band and U.S. Army Trumpeters took their places and final work on the special stage for the President and platform guests,

and the press box, was completed. The President first came briefly to the Pavilion at 12:00 noon to broadcast his weekly radio talk, then was transported to the Fair Opening Ceremonies. He returned to the U.S. Pavilion about 1:30 p.m. to be received by the Commissioner General of the Pavilion, who officiated at the ceremonies and introduced the President and platform guests. The ceremonial platform was located on the ground floor. Several thousand guests viewed the ceremony from all levels of the Pavilion's interior.



The President and First Lady at the U.S. Pavilion dedication ceremony on Opening Day. Joe M. Rodgers, U.S. Pavilion Commissioner General, is at the podium.



U.S. Pavilion guide does signing for hearing impaired at opening ceremony of U.S.A. Week.



U.S. National Week

An important part of nations' participation in all international expositions takes place during their national week or day. It is an opportunity to expand the thematic exhibits in their pavilions with cultural events and visits of national dignitaries. Nearly all the participating nations made elaborate plans to celebrate their national week and day.

The U.S. Pavilion appropriation did not include funds for a USA National Week. The absence of such an event would have been embarrassing to the United States as the host nation. KIEE, the prime host, had no special entertainment plans for a USA Week.

In the Summer and Fall of 1981, the PA staff contacted show producers and potential financial supporters. This resulted in a well-known impresario and producer of fireworks spectacles agreeing to produce the USA National Week with funds to come from sales of souvenir books, TV time and admission to the



U.S. Pavilion guide becomes Uncle Sam for USA Week.

University of Tennessee (U.T.) stadium for a July 4th Spectacular.

Financial arrangement was made for advance funds between the producer, the Fair souvenir book publisher and a well-known public relations firm, giving the public relations firm the right to sell souvenir books at the stadium show and on the Fairgrounds to recover the advance backing. Other private sources also contributed funds.

The PA staff planned additional activities for USA Week which included a "National Week Gala" ball on June 28, attended by over 500 people; Court of Flags Ceremony on the Fairgrounds; a special ceremony honoring U.S. Veterans; a ceremony honoring the Daughters of the American Revolution, and other events, such as special parades and the arrival of the "Recreated Continental Army Units." Twice daily a "Rocket-Belt Pilot" was launched from the U.S. Pavilion for a brief flight. The jet propulsion energy source was contained in a back-pack. The pilot controlled the speed and direction with hand controls attached to the belt. This event attracted thousands of visitors to the U.S. Pavilion and the Fair. The week culminated with the "Star Spangled Spectacular" at the U.T. Stadium on July 4th.

The USA National Week was considered a success, in spite of some financial and other difficulties. The exhaustive effort of the PA staff as well as the entire U.S. Pavilion staff resulted in an impressive schedule of events. The fireworks spectacular and show on July 4th, despite a major storm the night before which nearly destroyed the set-pieces, was truly spectacular, and was attended by nearly 50,000 people.



USA Week opening ceremonies Bo Roberts, President, KIEE; Mrs. Rodgers and U.S. Pavilion Commissioner General Joe M. Rodgers.



U.S. Pavilion Commissioner General Joe Rodgers, addresses audience at Court of Flags on opening day of USA Week.



U.S. Marines raise flags on U.S. Pavilion concourse; USA Week.

The USA Day Evening Program

7:00–7:30 Pre-Show Entertainment

7:30–8:00 "Sounds of America"

United States Army Band, Chorus and Herald Trumpets, Colonel Eugene W. Allen, Leader and Commander; Captain Frank Dubuy, Director, Army Chorus, Dr. W. C. Julian, Director of Bands, University of Tennessee, Guest Conductor

8:00–8:15 Gymnastic Demonstration

Members of the U.S. Gymnastic Team



USA Week opening ceremonies. Jake Butcher, Chairman, KIEE and Mrs. Butcher; Allen Beach, Deputy Commissioner General, U.S. Pavilion, and Mrs. Beach and Randy Tyree, Mayor of Knoxville.

8:15–8:30 Official Opening Ceremony

Fanfare and "Americana Overture"

U.S. Army Band and Herald Trumpets

Welcome to International Guests

Commissioners General of Participating Nations

Entrance of the Colors
Commander-in-Chief's Guard, Company A, Third U.S. Infantry, Military District of Washington

Invocation

National Anthem

8:30–9:15 Johnny Cash with June Carter and the Johnny Cash Show Band

9:15–10:30 "A Star Spangled Spectacular"

Scene One: "Celebration"

Scene Two: "A Nation is Born"

Scene Three: "Way Down Yonder"

Scene Four: "Hello Broadway"

Scene Five: "L'il Bit of Country"

Scene Six: "Battle of the Galaxies"

Scene Seven: "An American Mosaic"

Scene Eight: "Space—The Quest of Man"

Scene Nine: "Salute to America's Gallant Men"

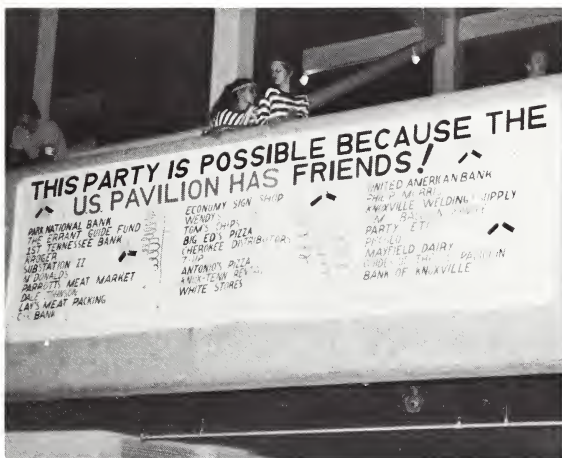
Scene Ten: "Grand Finale"



List of donors to international party on Pavilion West Plaza.

West Plaza

The architectural configuration of the U.S. Pavilion, with its east and west cantilevers, resulted in an ideal covered amphitheatre at the west end. The plaza, with its adjacent fountain pool was envisioned by the architects as a covered rest area for visitors; however, early in planning, the Pavilion staff designated this as the "West Plaza," an area for live entertainment and other events. Folding chairs, portable platforms, a public address system and other equipment were procured. To the south there was convenient access, through a wide passageway under the concourse to the Pavilion parking lot, and entertainers' busses and equipment could be brought directly to the Plaza. The generator room, off the passageway, had ample space for costume changes and musical instrument storage. With the wide stairs plus the folding chairs, the Plaza could seat an audience of over 500. From the west portion of the Pavilion's grade-level east-west concourse, several hundred more visitors could look down over the railing-bulkhead to view shows.



Knoxville College "Musical Memories" perform on Pavilion West Plaza.

The Hon. Hamish Gray, Minister of State, Department of Energy for Great Britain, and Trevor Gatty, Consul General and Commissioner General of the British Pavilion, tour the U.S. Pavilion during British week.



International Relations

In addition to the daily entertainment features, the Plaza was an ideal all-weather location for other events, particularly events that brought together personnel of the international pavilions and the Fair staff. The U.S. Pavilion staff and guides took the lead in this by hosting several gatherings on the West Plaza after pavilions closed at 9:30 p.m. Many Knoxville suppliers contributed food and beverages. Other international parties were organized by other pavilions and corporate sponsors, both on and off the Fair site.



Commissioners General participate in flag presentation ceremony during meeting of College of Commissioners General Susan Carroll, (left center foreground) U.S. Pavilion staff, assists.



U.S. Pavilion hosts "open house" for Saudi Arabia Pavilion staff on their national day. Prince Faisal bin Abdullah bin Turki Al-Saud, Manager, Public Relations, Royal Commissioner of Jubail (3rd from left).



Norishige Hasegawa, President, Sumitomo Chemical Co., LTD (center), Japan, receives USA pin in Pavilion lounge. Honorable Ryo Kawade (right), Commissioner General of Japan and President of the Steering Committee of the College of Commissioners General.



His Excellency Yoshio Okaware, Ambassador of the United States from Japan (right), is escorted to the U.S. Pavilion by Chris Arnold, U.S. Pavilion staff.

Pavilion staff member explains exhibits to delegation from the Camaroons and Nigeria. Lt. Governor John S. Wilder (right) accompanies group.



His Highness, the Royal Crown Prince of Jordan (left) and official party escorted through pavilion by U.S. Pavilion Associate Commissioner General Kyle Testerman (2nd from left).



Chinese Pavilion officers and staff at U.S. Pavilion open house during China Week.



Guests from international pavilions and KIEE hosted at luncheon in U.S. Pavilion dining room by U.S. Pavilion staff. His Excellency Ambassador Alberto Balladelli, Commissioner General Italian Pavilion (far right), and Anuar Karam, Deputy Commissioner General, Mexican Pavilion (2nd from left). Mary Beach, U.S. Pavilion (left).



The Rt. Honorable Douglas Anthony, C. H., M.P., Deputy Prime Minister (right), is greeted at the U.S. Pavilion during Australian week. Commissioner General Eric Wigley and Mrs. Wigley (2nd and 3rd from left).

His Excellency Suk Joon Suh,
Minister of Commerce and
Industry, Republic of Korea,
signs registry book at U.S.
Pavilion with aid of Patti Wilson,
Pavilion staff.



Korean Stamp Exhibit

During Korea's National Week, May 17-23, the U.S. Pavilion donated exhibit space, on the ground level in the large covered passageway adjacent to the West Plaza, for an outstanding and excellently presented exhibition of Korean postage stamps commemorating events in the 100 years of Korean-American diplomatic relations.

Columbus Day

The PA staff and other Pavilion employees and guides organized a special day of activities for the International Participants honoring Columbus Day, October 11. The day started with ceremonies at the Court of Flags. The U.S. Pavilion Associate Commissioner General served as master of ceremonies and presented King Ferdinand, Queen Isabella, and Christopher Columbus. Costumes were obtained and the parts were played by U.S. Pavilion personnel. The event was open to the general public. The main events of the day were an International Pavilion raft race and a "homemade"



U.S. Pavilion entry in Columbus Day Regatta.



Italian, Australian and Japanese Pavilion entries line up for Columbus Day Regatta.

boat regatta held on the Waters of the World. Prizes were awarded the winners by a judges' panel made up of officials from U.T., KIEE and the U.S. Pavilion. That evening, a Columbus Day reception for all internationals was held on the West Plaza.

Sports

The Special Events Section of the Public Affairs Office initiated an interpavilion sports program of weekly softball and volleyball games. At one time or another, teams from 10 pavilions played volleyball and 8 pavilions played softball. This was in addition to 8 teams formed from various departments of the Fair Organizers. This effort by the U.S. Pavilion PA Section brought together different pavilions' staffs in a spirit of friendly competition, contributing to the overall Fair spirit of developing international understanding and friendships.

Gymnasts clubs, although not part of the interpavilion league, performed daily at the U.S. Pavilion and became a popular attraction, bringing many fans through the Fair gates and to the Pavilion.



Champion cheerleaders perform on West Plaza.



USA gymnastic team performs on West Plaza.



U.S. Pavilion Associate Commissioner General Kyle Testerman prepares to introduce "Columbus," "Queen Isabella" and "King Ferdinand" at Court of Flags.

USA gymnastic teams perform on West Plaza.



Farewell Party

The Steering Committee of the College of Commissioners General formed a "Farewell Party" Planning Committee to organize a party to be given by all international participants as a "thank you and farewell" to members of the community and the Fair Organizers, on October 28. It was to be the final opportunity for all of the International Pavilion staffs, attendants and guides to get together. The U.S. Pavilion Deputy Commissioner General, Special Events Officer and Exhibits Officer served on the Committee for the U.S. Pavilion. Committee members were assigned to specific tasks. At the party, the "Maxwellaires" Air Force Jazz Band performed and entertainment and skits were presented by International Pavilion staffs. Formal presentations, by the Committee and Chairman of the College of Commissioners General, were made to the Fair Chairman, and President, the U.S. Commissioner General and his predecessor, and the Governor and Mayor. All of the International Pavilion staffs and attendants contributed in some way. Many pavilions set up decorated counters serving food and beverage of their country.

On October 31, the official Fair Closing Ceremony was held at the Tennessee Amphitheatre and the Court of Flags.

U.S. Volleyball team readies for match with Australia. Jim Van Slyke, U.S. Pavilion staff (front row right).

Administration

In July 1979, the Department of Commerce submitted a Fiscal Plan to Congress for approval of \$20.8 million for participation in Energy Expo '82. It detailed the breakdown of the \$20.8 million as: design and construction—\$12.3 million; exhibit design, fabrication, installation and dismantling—\$4.5 million; operations—\$2.0 million; and administration—\$2.0 million. The staffing requirements were 25 people for the U.S. Pavilion and 5 people for the U.S. Commissioner General.

Budgeting

Employing a staff began in the Fall of 1980. The first critical task was to develop and refine a fiscal plan which would reflect all cost information available at that time. A process of periodically refining the plan as actual costs became apparent was continued throughout the entire project. In December 1980, the budget was revised into Fiscal Plan II. At this point the Pavilion Administrative Officer was informed of two necessary changes. First, the Pavilion would be required to pay into the DOC Working Capital Fund an estimated \$147,000. However, this item was not included in the July 1979 plan submitted to Congress. An agreement was reached with the Chief of the Working Capital Fund, deferring charges until after the

Fair if budget savings could be found sufficient to allow payment. Funds for construction and exhibits and operation of the Pavilion were priority.

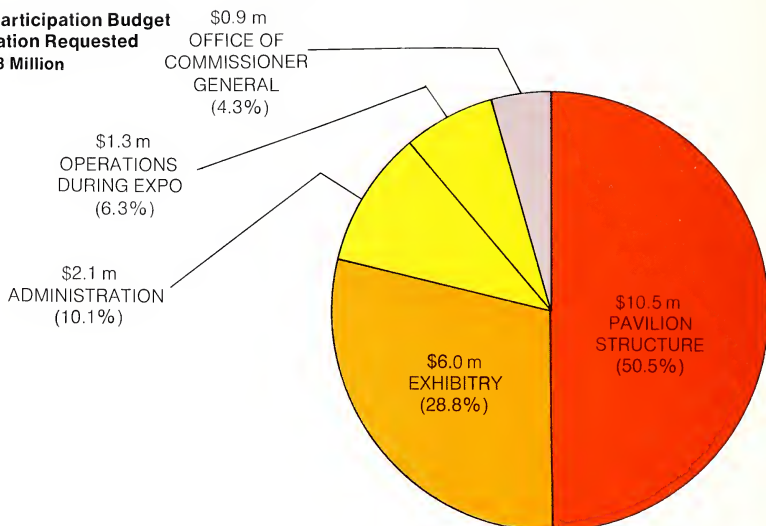
Second, the U.S. Pavilion Office was informed that only 25 people were to be hired and divided between the U.S. Pavilion and the U.S. Commissioner General's Office, instead of the original 30 approved. This resulted in a review of positions and a reduction of personnel in the Office of the U.S. Commissioner General to four and the U.S. Pavilion to 21. These remaining 25 positions still had to perform all the work as seen in the original planning.

Also not originally included in the plan submitted to Congress, was a sufficient staffing allotment for guides for the U.S. Pavilion. About 60 guides were needed instead of 40, but there was an even greater problem. The U.S. Pavilion could not employ the guides directly. After discussions with DOC Personnel and Contracts sections, it was determined that the only way to provide guides was to do so through an independent contractor. Fortunately, with a major university in the city of Knoxville, hundreds of students wishing to work at the Fair were available. DOC contracted with the University of Tennessee to provide a guide supervisor and guides. The above changes were reflected in Fiscal Plan II. (See Appendix for budget summary.)

Accounting Records

It was the responsibility of the Pavilion's Administrative and Budget and Fiscal staffs to keep the entire project within the appropriation. A manual system for each cost center was set up by the Pavilion's Administrative Section and every expenditure was subtracted daily from the total so that the exact financial position was known by the staff at all times. The categories of expenditures, in this type of project, do not all fall neatly into the DOC specified cost centers, but since these procedures could not be modified, the budget was divided into categories as close as possible to standard DOC categories, 54-01—Administration and Operations, 54-02—Construction, 54-03—U.S. Commissioner General, 54-04—Exhibits, 54-05—Film; and 54-06—Commissioner General of Section. There were also three gift accounts set up: The U.S. Pavilion, The U.S. Commissioner General, and the Commissioner General of Section. All gifts of money or items were recorded in the respective gift funds.

**Federal Participation Budget
Appropriation Requested
Total \$20.8 Million**



Fiscal Plan II Through Fiscal Plan VI

As the project progressed toward opening, more information was known, and more actual cost decisions were made, allocations within the budget could be more accurately adjusted. Fiscal plans changed periodically to meet the then current budget allocations.

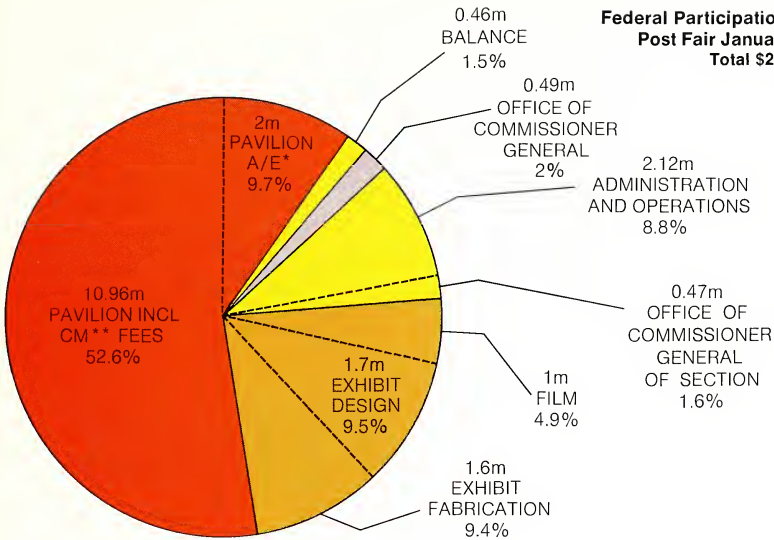
By March 1981, the Commissioner General of Section was appointed and a support staff hired. The original budget had called for this appointment later in the year. This necessitated a review of the budget to find extra funds for this manning

schedule change. Reduction adjustments were made in several cost categories, mostly in supplies and salaries. However, these earlier than planned additions were much needed to add strength to the Organizers' campaign in soliciting private industry participation in the Fair, as well as similar U.S. Pavilion efforts.

In later fiscal plans, other general economies were made. Payroll was reduced by filling many staff positions later than originally scheduled and at a lower rate. Shipping costs to and from the site were

substantially reduced. Savings were made by moving D.C. staff from Georgetown back to the Commerce Building and remaining there until the staff returned from Knoxville, thus avoiding outside rent for the first and second quarter of FY 1983. Supply needs were dramatically reduced. The initial purchase of office equipment was deemed enough to carry through the entire Fair, albeit minimal and often causing inconvenience. The film contract was reduced by \$160,000 by relinquishing distribution rights.

**Federal Participation Budget
Post Fair January 1, 1983
Total \$20.8 Million**



* A/E = Architect/Engineer

** CM = Construction Management

Conservation and Augmentation of Budget

From the appropriated funds, \$12,000 was authorized for the U.S. Commissioner General of the Fair for entertainment of foreign officials, but this was insufficient, and there were no similarly designated funds for the Office of the Commissioner General of the Pavilion. Because of the popularity of the U.S. Pavilion, the Office of the Commissioner General of the U.S. Section had as many, if not more, representation responsibilities than the U.S. Commissioner General for the whole Fair.

Prior to opening of the Fair, in order to provide funds for

entertainment, receptions, and other courtesies, a Gifts and Bequests fund was set up for the Pavilion Commissioner General, as well as for additional funds for the Commissioner General for the Fair. Privately donated funds were deposited in these accounts. Supplies and services were also donated for use in protocol and courtesy representation, critical to the United States image in this international event.

Also in order to cut other costs, loans of exhibits' hardware and software, artifacts, furnishings, and services were given to both the U.S. Pavilion

and the U.S. Commissioner General. These loans greatly reduced the burden on the budget and in many instances provided a better display or better materials and services than it would have been possible to purchase from existing funds.

Administrative Coordination

Washington D.C. Offices

Office space was not available in the main Commerce building for the expanding staff of Schedule A term employees. Outside space was sought and found at 1010 Wisconsin Avenue in a building in the

final stages of completion. On December 1, 1980, the U.S. Pavilion offices and Washington office for the U.S. Commissioner General were transferred to this Georgetown location. By April 1981, the staff had nearly outgrown the space.

The move across town from the support services and the International Expositions Staff office in the DOC building meant many commutes between the two offices, sometimes several times a day, in order to coordinate efforts, exchange documents and attend meetings. After the Fair opened, the remaining staff of three was transferred back to the DOC building.

Knoxville Field Office

A temporary field office in Knoxville had been in the original planning, but it became urgent in January 1981, that this office should be established and staffed, particularly with a resident Pavilion engineer, as soon as possible. Fortunately, ground floor space, requiring only minimal refurbishing and with six adjacent parking slots, was located two blocks from the U.S. Pavilion site. Securing space through GSA delayed occupancy until May. By June 1981, an engineer, administrative assistant and secretary were employed locally and one secretary transferred from the Washington, D.C., office.

Over half the appropriation was designated for construction. Faced with this budget priority, critical schedules and other matters needing attention, the Assistant

Commissioner General of the U.S. Pavilion transferred to Knoxville in July 1981, to direct all field operations.

Pavilion Offices

Offices in the U.S. Pavilion could not be occupied until April 1982, but by February, all the staff to be assigned to Knoxville had been transferred, resulting in an overload on office equipment, telephones and space in the temporary field office. To relieve the situation, the Pavilion Engineer, Facilities Manager and a secretary moved first to a rented trailer on the site, and later into the first available room in the Pavilion with heat and phones.

Several devices and systems were initiated to alleviate the multi-office communications problem. Telecopiers were established in the Georgetown office, U.S. Commissioner General's office and Pavilion field office (later in the Pavilion office); DOC had a telecopier in the central mail room. Staff meetings were scheduled simultaneously in both the Georgetown and field office. Each office had telephone conference speakers in case discussions between offices were required.

Other measures to improve communications were taken. The Commissioner General of Section established a liaison person in his Nashville office to coordinate with the Pavilion staff. A member of the KIEE staff was invited to sit in on the Pavilion staff meetings.

Computerization

One of the most helpful corporate loans to the U.S. Pavilion was the computer systems. This gave the Pavilion word processing, mail-list handling, inventory, scheduling and budget systems. With this system, the budget was programmed for each cost center and cost category. Columns to show total budget, total obligated to date, and balance left in each fiscal year was set up. Each day, every obligation was recorded in the system and new totals for obligations and balances computed. In this way, staff was able to know, on a daily basis, exactly how much money was committed and how much money was still unobligated.

Each time budget changes were made in the Fiscal Plan, the figures were brought up to date. The computer system ensured that all expenditures were recorded instantly and that the latest information was always available. Because it was computerized, the balances were figured automatically and the bottom line figure was always \$20.8 million.

This system was more accurate and much faster in handling the hundreds of obligations on the project than the cumbersome manual system. It also produced a concise, easily-read report that provided a daily check on amounts spent and pending obligations.

Theater Management

The originally approved 1979 budget did not adequately take into account the personnel and other requirements for the operation of a 1000-seat theatre with a show every 45 minutes, 16 times a day; a theater holding area, and an adjacent information and book counter. As early as January 1981, the staff discussed how to augment funds in order to properly operate the theater. An effort was launched to find a single donor to underwrite all or even part of the cost of the film and projection equipment. Post-Fair distribution rights to the film, with certain usage reserved for DOC, was considered as an added incentive. Several companies expressed interest, but the donation did not materialize. Other ideas, such as a small admission to the theater or sale of Pavilion souvenirs at the book and information counter

were discussed and researched as to legality. The admission idea was quickly dropped—BIE objections could be expected and possibly public criticism.

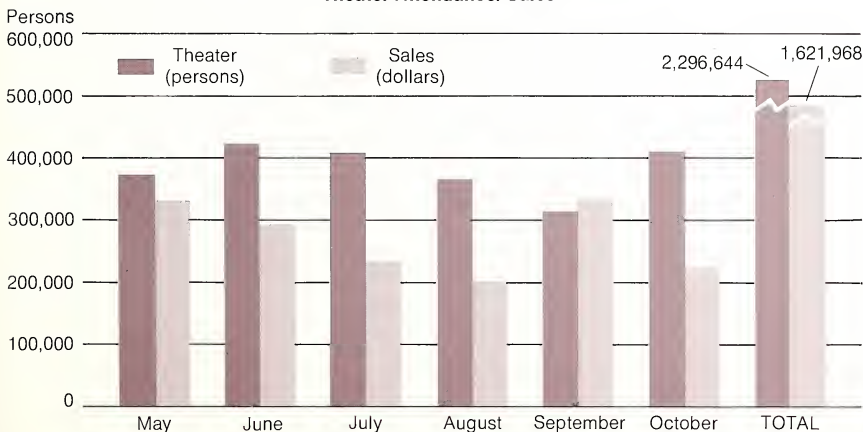
A quasi-State Government organization in Alabama, successfully operating a space and rocket museum along with souvenir sales, expressed interest in managing the theater. The Alabama organization

offered to supply the projection and other equipment, operate the theater and holding area, and book and information counter in exchange for a fixed payment and rights to sell U.S. Pavilion "Official" souvenirs at the counter to help recover expenses. An agreement was consummated in March 1982.



A committee of the Tennessee State Legislature hold special morning session in the U.S. Pavilion theater.

Theater Attendance/Sales



Souvenir Counter

Although having a sales counter in the U.S. Pavilion added several logistics and cleaning problems, it was an added attraction for the visitor. The quality of the U.S. Pavilion souvenirs was kept high; prices were competitive and often less than the prices of similar souvenirs being sold elsewhere at the Fair. The counter was always busy and visitors appreciated the opportunity to buy a U.S. Pavilion memento.

The presence of the souvenir stand in the Pavilion made available a ready supply of a variety of souvenirs for presentation to special guests. The operators donated the original supply; when this ran out, additional souvenirs were ordered at reduced rates, using monies donated to the Pavilion Gifts and Bequests Fund.



Former U.S. Commissioner General Charles Fraser with guest Dr. Solaiman Al-Solaim, Minister of Commerce, Saudi Arabia, view Fair from U.S. Pavilion balcony.



U.S. Pavilion souvenir counter.

Attendance at the Knoxville Fair did not follow the predicted attendance pattern. Usually, after the Opening Day excitement and the first week, attendance drops. It then increases as schools close for summer vacation, peaking in August, then dropping again in early September followed by a rapid rise in mid-September through the close of the Fair. In Knoxville, a steady rise started shortly after opening with consistently high attendance in May and June; then a steady decline occurred through July, August and September, with a sharp rise again in October. Interesting also, is the fact that throughout the Fair, Sunday's attendance was the lowest, when traditionally it is the highest.

With the crush of attendance starting early, there was little time for people-handling adjustments and fine tuning. Long queue lines developed, particularly at the U.S. and Chinese Pavilions. The U.S. Pavilion's "Design Day" attendance was 50,000, and the two escalators to the first platform and the two more to the exhibit entrance level could easily handle such capacity at nearly 5,000 per hour, but congestion developed on the walkway and in the building. A method was devised to route visitors between the two entrance escalators with guides with walkie-talkies stationed in strategic locations, controlling the volume of people by opening and closing the second escalator as needed. An inside

observer kept the guide at the entrance informed of crowd conditions in the building. The system worked and even on the most crowded days, visitors waited no more than 15 minutes to enter the U.S. Pavilion.

Hand counters were used to monitor U.S. Pavilion attendance at the exhibit entrance. Over 5.8 million were counted. There is always a percentage of error on the low side when using a hand counter, especially on crowded days. Also, entertainers and special guests, entering directly from the concourse to the theater or to the exhibit by elevator, were not always counted. Allowing for this, the net attendance is estimated at well over 6 million, but for reporting purposes, a rounded 6 million is used as the U.S. Pavilion official attendance over the Fair's 184 days. This averages approximately 33,000 a day.

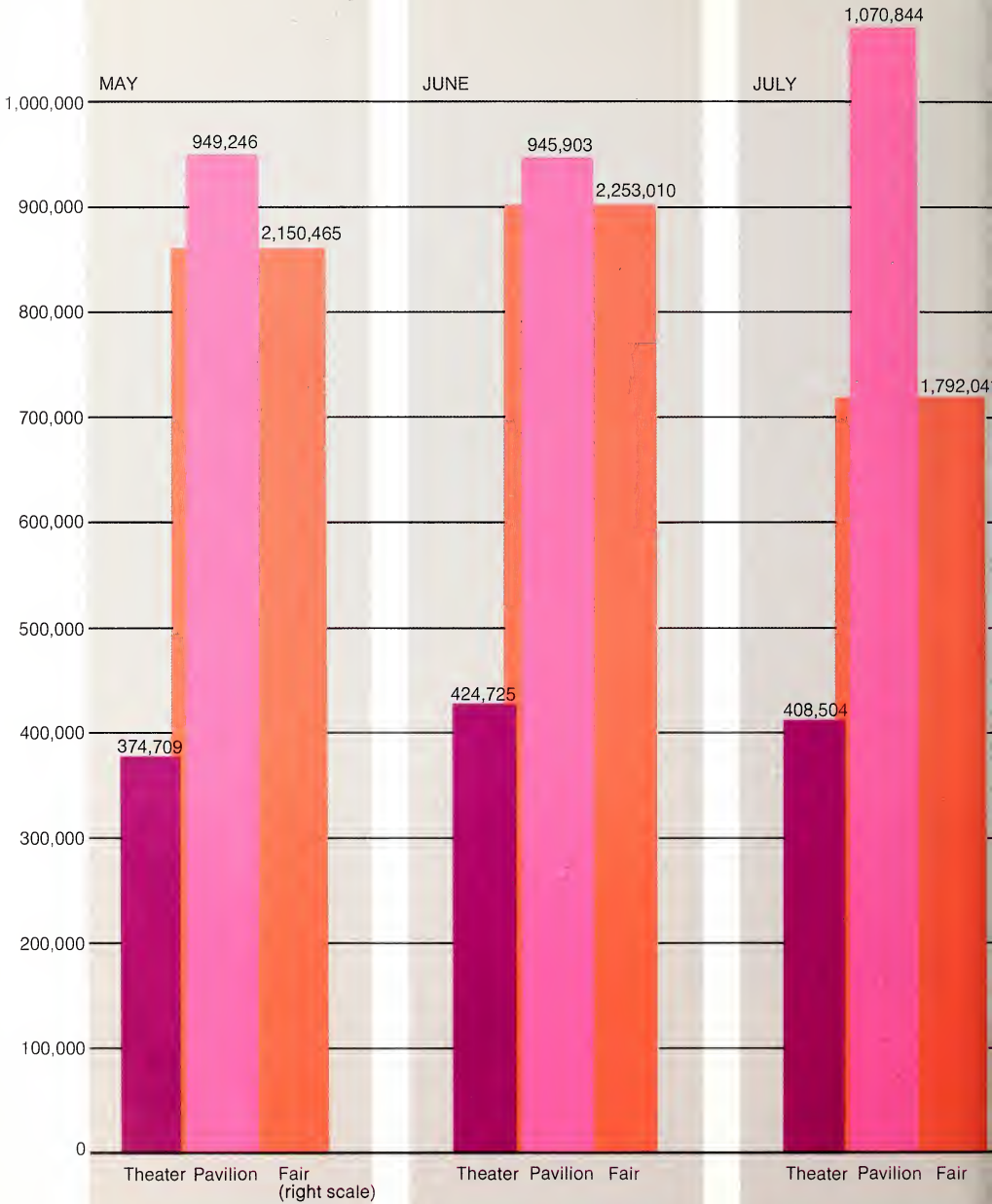
Over 8,000 special visitors registered in the Commissioner General's lounge. This, too, is less than the actual, since many visitors, especially those in large groups, did not sign the guest book. The hundreds of handicapped visitors who used the elevator were included in the general attendance count.

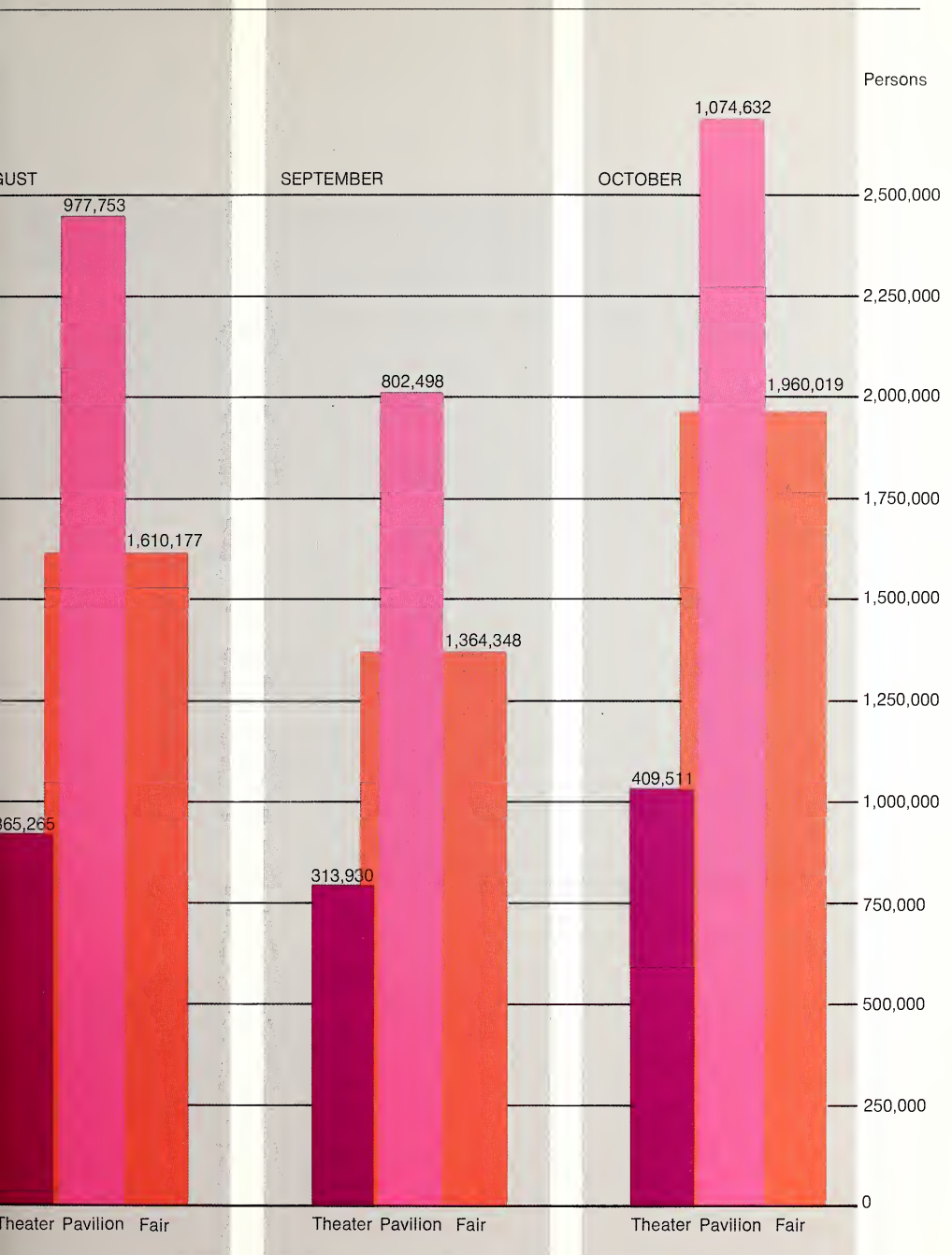


Crowds awaiting entrance to the U.S. Pavilion.

Attendance Chart The attendance chart is based on the gross attendance of 11 million.

Persons





The Fair's overall attendance goal of 11 million was surpassed. This figure is a total "turnstile" count and includes employees, which were estimated to be in excess of 6 thousand a day, plus season pass repeats and those entering and leaving one or more times on one ticket using the "hand stamp" re-entry system. Based on the gross attendance figure for the Fair, the U.S. Pavilion attracted over 50%.



Fairgoers viewed from U.S. Pavilion 6th floor offices.



Commissioner General Rodgers (rear, 3rd from right) and Mrs. Rodgers (front, 3rd from left) with visiting group from Montgomery, Alabama.

Guides

The U.S. Pavilion guides were provided under a contract with the University of Tennessee. In order to meet the building and exhibits needs and cover other duties, it was determined that a total of 61 guides were needed to staff the building from 8:00 am to 10:00 pm, seven days a week, with no one guide working more than 40 hours per week, and the total work hours not to exceed 2,440 per week. These requirements did not include the 30 theater guides and information/souvenir shop staff who were provided under contract with the theater managers.

Guides were selected locally from a pool of applicants coming mostly from the University of Tennessee and local colleges. Nearly 150 applicants were interviewed and 60 were chosen. Applicants were judged on the basis of poise, manner, maturity, and special skills, such as foreign languages and signing for the deaf. The Pavilion guide pool included young people proficient in Arabic, French, German, Japanese and Spanish, as well as deaf signing.



Photo courtesy of Continental Telecom Communicator

U.S. Pavilion guide takes her shift as phone receptionist.



Darrell Stingley of the Boston Patriots is given warm welcome at the U.S. Pavilion by Shirley Gray, U.S. Pavilion staff.

In addition to guides, U.T. was required to provide a guide supervisor. The supervisor's responsibilities included preparing payrolls, scheduling, and coordinating guides responsibilities with other departments in the Pavilion. The guide supervisor, along with the Pavilion staff, was responsible for maintaining morale and esprit de corps.

Guides' duties were not limited to greeting visitors and answering routine questions regarding the building and exhibit. In order to make the work as interesting as possible and to develop a sense of commitment, after a few weeks of experience, the guides were given much responsibility for supervising themselves. Each day, for each shift, a head guide was designated to be responsible for supervising the rotation of guides through duty stations in the building. The appointed head-guide was non-rotating, as was the telephone receptionist, press aide, escort driver, and building operations assistant, who were assigned these duties for a full shift. All guides served in all positions

during the course of the Fair; no one became a "specialist" in any one job, but everyone learned all necessary skills for all assignments. This resulted in a great deal of flexibility; the supervisor did not have to depend on one individual for a specific task.

A formal training period took place during the last two weeks before opening. Each guide was given a training manual which included a history of the U.S. Pavilion, a description of the design concept, Pavilion facts and figures and the text of copy appearing in the exhibit. The training schedule included brief presentations by senior staff on each of the aspects of the Pavilion, ranging from construction to exhibits and public affairs. The intention was to give the guides a feeling for the Pavilion; what it represented, and the planning that went into it.

Guide uniforms, in denim and red-check, reflected an "all-American" image. Uniforms were donated both for the guides and for the senior staff, who wore navy blue jackets and tan pants or skirts. The donation was confirmed in April 1981 and uniform designs were developed in consultation with Pavilion staff. The guide staff had not been employed at that time but it was necessary for orders to be placed so that the

uniforms would be ready by opening. Final uniform fittings required much last minute work of the part of the donor, to assure that every guide had a fitted uniform by Opening Day.

The original agreement with U.T., negotiated by the DOC Contracts Section greatly limited guides' duties. This was later amended allowing more flexibility. Guides assisted in several operations tasks such as setting up sound equipment for entertainment on the West Plaza, arranging ropes and stanchions for crowd control, and other errands. Press aides assisted the PA Section in conducting Pavilion and Fair tours for the press and dignitaries and greeted visitors. When the Pavilion clerical staff was reduced by attrition or transfers, guides aided as duty secretaries. The guide supervisor worked with the PA Section to plan guide requirements for special events.

The United States Pavilion guides served with enthusiasm and loyalty, with a very low turn-over rate for the size of the staff, age cohort, and at a near minimum pay scale. They performed all the tasks asked of them with enthusiasm. In the cold, the heat, the rain, with thousands of people each day, they worked hard and they worked well. The guides represented the Department of Commerce and the United States to millions of guests, consistently receiving high praise.



U.S. guides with U.S. Pavilion logo.

Scheduling

The Fair started with a schedule of open hours from 10:00 a.m. to 10:00 p.m. for pavilions. Later, due to a volume of attendance not anticipated so early in the season, gate opening was advanced to 9:30 a.m. U.S. Pavilion staff arrived between 8:30 a.m. and 9:30 a.m. to check Pavilion mechanical functions, activate electronic equipment and ready the Pavilion for opening.

In order to staff the Pavilion for over 12 hours a day, seven days a week, for 184 days, a minimum of three shifts was required. Such a system was inaugurated on May 2, the day after Opening. All staff was present on Opening Day to assist in Pavilion ceremonies and the President's visit. The staff, including guides, was divided into three teams, working six consecutive days, with three days off. The six-day periods were staggered. When the starting hour was changed to 9:30 a.m., the Pavilion opened at 9:45, and all staff and guides were to be in uniform and at their stations. The first film showing in the theater was at 10:15 a.m., allowing early visitors time to see the exhibits before entering the theater.

Three senior officers were designated "Duty Officers," so that a responsible Government representative would be in the Pavilion during all open hours; the early shift officer checked the Pavilion for readiness and the late shift officer secured the building after closing. The clerical staff was also divided into three teams with a "duty

secretary" assigned to each team. An administrative staff worked regular business hours. During the first few weeks of the Fair, several schedule modifications were made to accommodate irregular hours of some student guides and to add personnel to the staffs of the PA Section and Facilities and Services.

Transportation

The U.S. Pavilion's "official" vehicular transportation for officers, staff and special guests was supplied through generous loans. The U.S. Pavilion car fleet consisted of:

- 2 Cadillac Limousines
- 1 Pontiac J-Car Sedan
- 1 Chevrolet Cavalier Station Wagon
- 5 Jet Electric-Escort Sedans
- 1 Jet Electric Courier Pick-up Truck
- 3 Natural Gas Fairmont Sedans

All cars were appropriately identified with decals or other markings as U.S. Pavilion official vehicles. The two limousines carried specially ordered Tennessee license plates—USA 1 and USA 2. In addition to the above regular car pool, a Knoxville Cadillac dealership supplied additional cars as needed.

Parking

The U.S. Pavilion location was excellent for vehicle access, directly from a city street to an open area, one level below Fairgrounds level, but



U.S. Pavilion staff promotes U.S. exports.



Jet electric vehicle on display in front of U.S. Pavilion.

with no access to Fair streets where vehicles were prohibited. This open area could accommodate a portion of Pavilion employees and service personnel cars, U.S. Pavilion official cars, and limited, temporary parking for special guests and entertainers.

The Fair organizers generously assigned 16 additional parking slots to the U.S. Pavilion in a Fair parking lot outside the site, across the street from the Pavilion. These spaces were used for overflow parking on special days and for official vehicle storage when needed.

Coordinated Hospital Services Group.



First-Aid

A fully equipped and staffed emergency aid station was established on the ground floor near the elevator, easily accessible to the west exit door and vehicle area outside for easy transfer of emergency victims to ambulances.

The Pavilion budget could not contain the cost of a fully staffed aid station. However, an association of hospitals generously contributed a professional staff, and other contributors provided modern equipment and supplies. Fortunately there were few serious accidents or health crises, but the station was constantly in use. During the Fair, 6,175 people were treated in the First Aid Station.

Maintenance and Cleaning

The U.S. Pavilion's cleaning and maintenance services company was selected through competitive bid. A Knoxville-based firm won the award. The bulk of the Pavilion cleaning was done after closing each night, but a daytime, open-hours crew was assigned to do continuous trash and litter pick-up and rest room maintenance.

During the pre-Fair activities and Opening Day, additional personnel had to be added to do a variety of maintenance, cleaning and carpentry work. Immediately after opening, when the crush of visitors was beyond the Fair estimates, maintenance personnel were again added to work in the West Plaza area and the loading area.

Throughout the balance of the Fair, with continued capacity or near-capacity attendance, the Pavilion was kept clean and maintained.

Electro-Mechanical Systems

A solar-powered heating and cooling system supplemented conventional building heating and air conditioning systems. State-of-the-art roof-mounted, sun-tracking, focusing collectors provided the solar energy collection equipment for the system. In summer operation, an absorption chiller used the solar heat to provide base-line building cooling. When the solar system was fully loaded, a conventional electric-driven chiller was used. In winter operation, solar collectors, in conjunction with the absorption chiller, were designed to

supplement the heating load. This system supplied roughly 10% of heating capacity at 180 degrees water temperature.

An electrically driven centrifugal, high-efficiency chiller provided maximum cooling with minimum electric input. The chiller was specified to provide building cooling with a maximum electrical consumption rate of 0.69 kwh per ton-hour load.

Air handler economizer cycle units were controlled to take full advantage of free cooling provided by fresh air instead of mechanical refrigeration. Whenever outside air conditions were such that building loads could be satisfied by introduction of fresh air, the air handler economizer controls activated and reduced or eliminated the need for electrical refrigeration.

All water heaters met ASHRAE energy requirements. All public lavatories were equipped with metering faucets 1/4 gpm flow restrictors. Toilets were equipped with water-saving flush valves.

Energy Conservation Features

The U.S. Pavilion utilized a significant amount of glazing on its sloping north wall maximizing use of natural light as well as allowing viewing of the Fair from within the building. Also, the building orientation attempted to maximize daylight while minimizing mechanical cooling requirements. Carefully selected reflecting-insulating glass provided all-season insulating properties while allowing excellent light transmission for the interior. A metallic coating reflected up to 29% of solar energy, while a

substrata glass absorbed a portion of the remaining solar energy and rejected up to 36% of this energy to the exterior through re-radiation and convection.

The Pavilion was oriented so that its long axis is almost perpendicular to Knoxville's prevailing May/October breezes, thus taking advantage of natural ventilation.

Security and Communications

A professional security company was selected through competitive bid. An average of 12 guards, working in shifts, were required over a 24-hour period. Two guards covered the closed hours. The security service outfitted their personnel in identical jackets and slacks so they were easily identifiable.

A central security control and

Utilities/U.S. Pavilion

Month	Electric	Gas	Water/ Fire Protection	Water and sewer	Total
May	\$10,784.16	\$ 852.75	\$ 32.00	\$ 2,455.00	\$14,124.47
June	10,996.65	1,363.93	32.00	4,654.70	17,046.78
July	10,816.46	2,118.95	32.00	3,425.90	16,393.31
August	11,541.94	1,186.98	35.00	4,385.82	17,149.84
September	11,218.60	3.30	35.00	3,675.17	14,932.07
October	10,204.38	3.30	35.00	702.59	10,945.21
TOTAL	\$65,562.19	\$5,529.21	\$201.00	\$19,299.18	\$90,591.68
Average	\$10,927.03	\$1,382.30	\$ 33.50	\$ 3,859.84	\$15,098.61

communication room was established on the ground floor. From this room, all mobile communications stations could be monitored. Guards, as well as staff and guides assigned stations, could communicate with each other as well as the control room. Each station was assigned a code number.

Originally, only guards, Duty Officers, operations personnel and the PA office were assigned walkie-talkies, but it was soon found that additional stations were needed including certain strategic guide positions. The mobile communications units were critical during visits of dignitaries requiring special security precautions. The regional Secret Service and FBI personnel were exceedingly cooperative during these visits.



U.S. Pavilion security guard in summer uniform.

One of the most difficult security posts was the vehicle entrance gate, where all vehicles, passengers and pedestrians including all Pavilion staff, were checked for proper Fair entry permits or I.D.'s and logged in and out. The gate entry report, along with the closed-hours "rounds" report and special "irregularity" reports, were submitted each morning, for the previous 24 hours, for inclusion in the log book.

Certain telephones in the Pavilion were equipped so that announcements could be made over the building-wide public address system direct from the telephone set. In addition, the system had the capability to direct announcements to certain zones, such as the concourse, or the theater.

Conveying Systems:

Visitors ascended 12.5 feet in two 32" escalators to an elevated entry platform, then ascended an additional 25 feet on two more adjacent 32" escalators, within the cage wall, to a final entry platform outside the topmost exhibit level. This

arrangement of exterior escalators provided Pavilion visitors views of nearby Fair events and scenery while ascending. Once inside, visitors circulated down broad stairs and a bridge ramp through a series of exhibit platforms. An elevator provided access to each level for the physically handicapped. This system was able to carry 4,000 to 5,000 people an hour.

Log Book

Beginning with Opening Day and extending through the last day of the Fair, a log was kept covering all hours the Pavilion was in operation. The Duty Officer was responsible for making entries detailing general conditions, such as weather and attendance, and noting special occurrences or visitors, as well as operational problems and how they were being solved. The log was entered on a computer and available for viewing throughout the day and was printed out along with cumulative attendance figures each morning before the opening of the Pavilion. In addition, other operational units in the Pavilion, such as security and first aid, prepared detailed daily reports. These, along with the schedule of events, the official vehicle assignment log, the parking lot access log, and the Duty Officer's log were compiled daily and became the record of U.S. Pavilion operations.



U.S. Pavilion interpreter explains fairgrounds from Pavilion balcony to Mitsubishi.



THE SOUTH ATLANTIC REGION
THE AMERICAN INSTITUTE
OF ARCHITECTS
IS PLEASED TO CONFER THE

HONOR AWARD

ON
FINCH ALEXANDER BARNES
ROTHSCHILD & PASCHAL, INC.

FOR THE DESIGN OF
UNITED STATES PAVILION - 1982 WORLD'S FAIR
KNOXVILLE, TN

Franklin D. Smith
AWARDS CHAIRPERSON
John H. McGee
DIRECTOR, SOUTH ATLANTIC REGION



Deputy Secretary Guy Fiske (right) accepts the National Audio Visual Association's "Outstanding Achievement" Award for 1982, to the Department of Commerce for the U.S. Pavilion's interactive computer video systems; Harry McGee, Executive Vice President of the association presents the award. James Ogul (far left), U.S. Pavilion exhibit officer and Albert H. Woods (2nd from right), of Ramirez and Woods, exhibit designers for the U.S. Pavilion look on.



Design Awards Program
1982

Georgia Association
American Institute of Architects

Award for Excellence in Architecture

presented to

FABRAP Architects, Inc.

in recognition of outstanding design of

United States Pavilion - 1982 World's Fair

for

United States Government

William R. Smith
President

John H. McGee

James Ogul

Albert H. Woods

Smith, Ogul & Woods

John H. McGee

The 1982
Audio-Visual
Award for Excellence



Presented to the

U.S. DEPARTMENT OF COMMERCE

For its innovative and progressive use of audio-visual, video and microcomputer technologies in the U.S. Pavilion of the 1982 World's Fair to demonstrate advanced technologies, and to enable visitors to become actively involved in learning about energy topics and issues, by

THE NATIONAL AUDIO-VISUAL ASSOCIATION

October 18, 1982

William R. Smith
PRESIDENT

John H. McGee
EXECUTIVE VICE PRESIDENT

XIV. DISMANTLING AND INVENTORY

Dismantling and Inventory

Plans for dismantling the United States Pavilion exhibit began in July 1982. With a wide variety of items ranging from lighting fixtures to exhibit artifacts, and hundreds of individual items to dispose of, an efficient dismantling plan required an accurate inventory. Items in the Pavilion were obtained in one of four ways—loan, purchase, rental, or donation—and disposition requirements differed accordingly. Given the complexity of the task, the staff decided to use the Pavilion office computer capabilities to design a detailed inventory system with information which could be sorted in various ways to produce a range of specific inventory information.

Every item in the Pavilion fit into one of nine standard inventory categories: Building, exhibit, furnishings, office equipment, theater equipment, electronic equipment, vehicles, expendables, or miscellaneous. The inventory work sheet

solicited information on each item's value, quantity, description (such as serial number), method of procurement, location in building, date of inventory, and staff contact responsible for the item. Furthermore, the work sheet also requested information which could be later used in the dismantling process, such as: crating requirements, crate location, packing schedule, disposition, destination, transportation, and shipping schedule. Each inventory sheet was assigned a number and the information was transferred to the computer. The inventory sheets were kept on file for reference purposes. If the computer print-out did not provide detailed enough information, the disposition sheet number identified where further information could be found. With inventory information in hand, the staff began planning Pavilion dismantling procedures.

A determination had to be made on the disposition of all items in the Pavilion. Rental or lease items were returned after use. Items loaned to the Pavilion, whether under the exhibit, building, or other category, were returned to the lender or arrangements were made to dispose of the item according

to the lender's instruction. Items purchased by DOC or donated to the project were either designated to the New Orleans project or were identified as items to be surplus.

Dismantling the U.S. Pavilion exhibit was a major task due to the number of large industry artifacts and delicate historical artifacts which had to be removed and returned. The exhibit installers were the most logical choice for dismantlement, since they were familiar with the technical aspects of installation.

In order to hold down costs, close coordination was necessary between the exhibit staff, the dismantlement contractor and lenders of industry and historical artifacts. In dismantlement, as in installation, a number of companies and institutions sent experts to assist. Coordination and scheduling was important in efficiently utilizing specialized trades and equipment for taking down large exhibits. The exhibits were dismantled and shipped to their respective locations by the end of the third week of November and contract work was completed on schedule and within budget.

Residual Use of Exhibits

Residual use was found for a majority of the exhibits. In disposing of DOC owned exhibits and equipment, priority was given to the U.S. Pavilion in New Orleans. Items reserved included exhibit cases, computer racks, light tracks and fixtures. Much of the remaining exhibitry (30 displays) was declared surplus and transferred to DOE through GSA for display in the American Museum of Science and Energy in Oak Ridge, Tennessee, including the larger share of graphic panels, exhibit platforms, and the time/energy sculpture. TVA received miscellaneous exhibits, including the architecture/commerce exhibit. All loaned artifacts were either returned to the lender or loans were renegotiated by the residual users.

Residual Use of Building

As this report goes to press, there is no firm purchaser for the U.S. Pavilion. The General Services Administration (GSA) is advertising for a sealed bid public sale on July 14, 1983. The City of Knoxville, in order to have time to find a private source of funds for purchase of the building to use as a sports or science museum, had requested a 180-day extension. This request was denied by GSA, but a sale cutoff date of June 14, 1983, was given the City.

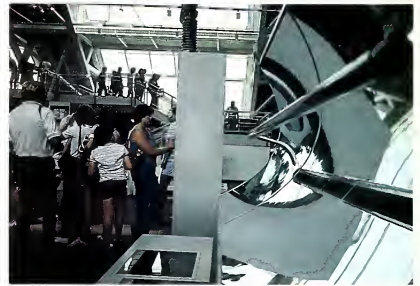
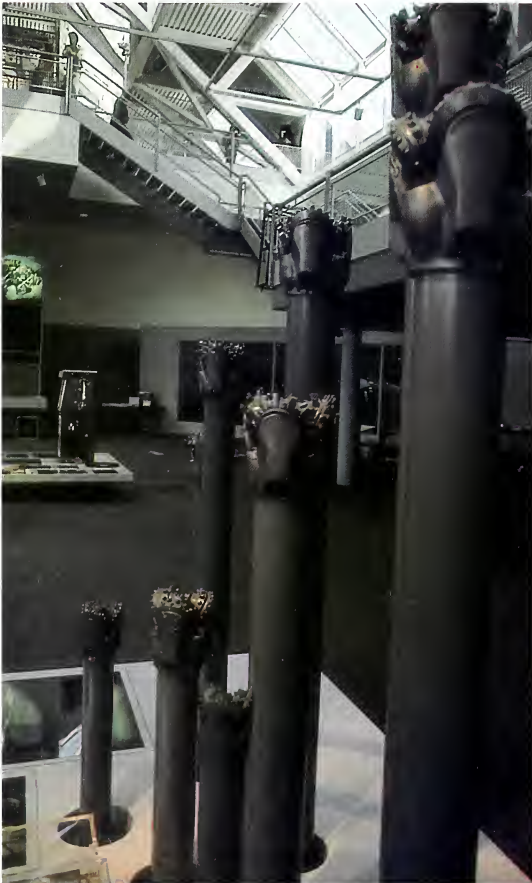
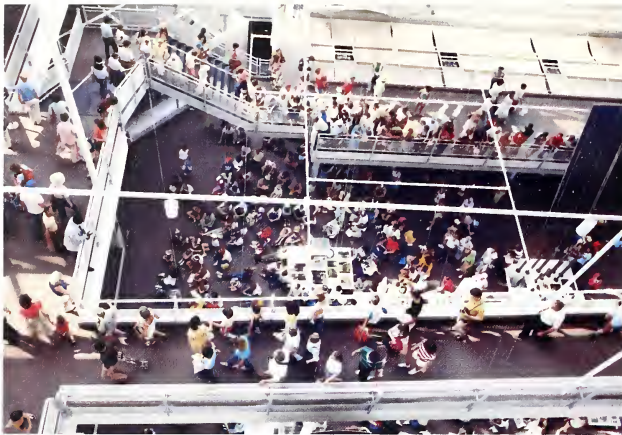
Security of the Pavilion is being maintained on a 24-hour basis under contract through September 30, 1983, with a 30-day cancellation clause if the building is disposed of sooner.



School patrol winners of the AAA safety award are given tour through U.S. Pavilion.

President Ferdinand Marcos and First Lady Imelda Marcos view the "Live Energy Show" robot.





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Public Law 96-169
96th Congress

An Act

To provide for participation of the United States in the International Energy Exposition to be held in Knoxville, Tennessee, in 1982, and for other purposes.

Dec. 29, 1979
[H.R. 5079]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in accordance with the Act entitled "An Act to provide for Federal Government recognition of and participation in international expositions proposed to be held in the United States, and for other purposes", approved May 27, 1970 (Public Law 91-269; 22 U.S.C. 2801 et seq.), the President is authorized to provide for United States participation in an international exposition to be known as Energy-Expo 82 (hereinafter in this Act referred to as the "exposition"), to be held in Knoxville, Tennessee, in 1982. The purposes of the exposition are—

International
Energy
Exposition,
Knoxville, Tenn.
U.S.
participation.

(1) to offer the citizens of the world a greater understanding of the effective uses of energy and energy resources, of the necessity to conserve existing energy resources, and of the need for creativity in the development of new and alternative energy sources; and

(2) to encourage tourist travel in and to the United States, stimulate foreign trade, and promote cultural exchanges.

SEC. 2. (a) The President, through the Secretary of Commerce (hereinafter in this Act referred to as the "Secretary") and the other officials designated in this Act, is authorized to carry out in the most effective manner the proposal for United States participation in the exposition, transmitted by the President to the Congress pursuant to section 3 of Public Law 91-269 (22 U.S.C. 2803), and to carry out the responsibilities of the Federal Government for the organization, development, and administration of the exposition as required by the Convention Relating to International Expositions, done at Paris on November 22, 1928 (hereinafter in this Act referred to as the "Convention"), and the General Rules for Energy-Expo 82, as approved by the Bureau of International Expositions.

(b) The President is authorized to appoint, by and with the advice and consent of the Senate, a Commissioner General of the United States Government for Energy-Expo 82, who shall be the senior Federal official for the exposition and who shall have such duties and exercise such responsibilities for the organization, development, and administration of the exposition as may be necessary and appropriate to fulfill the requirements of the Convention and the General Rules for Energy-Expo 82. The Commissioner General shall be in the Department of Commerce and shall be compensated at the rate of basic pay which is equal to the rate payable for level IV of the Executive Schedule under section 5315 of title 5, United States Code.

Presidential
appointment.

(c) The Secretary shall designate a Commissioner General of Section for United States participation in the exposition (as provided for in the proposal referred to in subsection (a)), who shall be in the Department of Commerce and who shall perform such duties in the execution of this Act as may be delegated or assigned by the Secretary, including serving as director of the United States pavilion.

Consultants and
experts.

SEC. 3. (a) The Secretary is authorized to obtain the services of consultants and experts as authorized by section 3109 of title 5, United States Code, at rates not to exceed the daily rate in effect for grade GS-18 under the General Schedule, to the extent the Secretary deems it necessary to carry out the provisions of this Act. Subject to the availability of appropriations, persons so appointed shall be reimbursed for travel and other necessary expenses incurred, including a per diem allowance, as authorized by section 5703 of title 5, United States Code, for persons in the Government service employed intermittently.

Contracts.

(b) Subject to the availability of appropriations, the Secretary is authorized to enter into such contracts as may be necessary to provide for United States participation in the exposition.

Buildings and
other structures,
erection.

(c) The Secretary is authorized to erect such buildings and other structures as may be appropriate for United States participation in the exposition on land (approximately 4.6 acres, including land necessary for ingress and egress) conveyed to the United States in consideration of participation by the United States in the exposition and without other consideration. The Secretary is authorized to accept title in fee simple to such land and any interest therein if the Secretary determines that it is free of liens, or of any other encumbrances, restrictions, or conditions that would interfere with the use of the property by the United States for purposes of this Act or would prevent the disposal of the property as provided in section 6. In the acceptance of such property, and in the design and construction of buildings and other structures and facilities on such property, the Secretary shall consult with the Administrator of General Services and the heads of other interested agencies to assure that such activities will be undertaken in a manner that (1) minimizes to the greatest extent practicable any adverse effects on the recreational and other environmental values of the area, and (2) preserves and enhances to the greatest extent practicable the utility of the property for public purposes, needs, or other benefits following the close of the exposition.

(d) Subject to the availability of appropriations, the Secretary is authorized to incur such other expenses as may be necessary to carry out the purposes of this Act, including but not limited to (1) expenditures involved in the selection, purchase, rental, construction, and other acquisition, and in the disposition, of exhibits and of materials and equipment for exhibits and in the actual display of exhibits, and (2) related expenditures for transportation, insurance, installation, safekeeping, printing, maintenance and operation, rental of space, representing and dismantling, and the purchase of reference books, newspapers, and periodicals.

SEC. 4. The head of each department, agency, or instrumentality of the Federal Government is authorized—

(1) to cooperate with the Secretary with respect to carrying out any of the provisions of this Act; and

(2) to make available to the Secretary from time to time, on a reimbursable or nonreimbursable basis, such personnel as may be necessary to assist the Secretary in carrying out any of the provisions of this Act.

Report to
Congress.

SEC. 5. Within one year after the date of the official close of the exposition, the Secretary shall transmit to the Congress a report on the activities of the Federal Government pursuant to this Act, including a detailed statement of expenditures. Upon transmission of such report to the Congress, all appointments made under this Act shall terminate, except those which may be extended by the Presi-

dent for such additional period of time as he deems necessary to carry out the purposes of this Act.

SEC. 6. After the close of the exposition, all Federal property shall be disposed of in accordance with provisions of the Federal Property and Administrative Services Act of 1949 and other applicable Federal laws relating to the disposition of excess and surplus property.

40 USC 471 note.

SEC. 7. The functions authorized by this Act may be performed without regard to the prohibitions and limitations of the following laws:

(1) That part of section 3109(b) of title 5, United States Code, which reads "(not in excess of one year)".

(2) Section 16(a) of the Administrative Expenses Act of 1946 (31 U.S.C. 638a) to the extent that it pertains to hiring automobiles.

(3) Section 201 of the Federal Property and Administrative Services Act of 1949 (40 U.S.C. 481) (procurement).

(4) Section 305(c) of the Federal Property and Administrative Services Act of 1949 (41 U.S.C. 255(c)) (security for advance payments), and section 3648 of the Revised Statutes of the United States (31 U.S.C. 529) (advance of public moneys), if the Secretary determines that it is impracticable to obtain adequate security and that there is a compelling need to make an advance payment.

(5) Section 322 of the Act of June 20, 1932 (40 U.S.C. 278a) (lease of buildings to the Federal Government), if the Secretary determines that waiver of that section would be in the best interests of the Federal Government.

(6) Section 2 of the Act of March 3, 1933 (41 U.S.C. 10a) (Buy American Act).

(7) Section 501 of title 44, United States Code (printing by the Government Printing Office).

(8) Section 3702 of title 44, United States Code (advertisements without authority).

(9) Section 3703 of title 44, United States Code (rates of payment for advertisements).

SEC. 8. To carry out United States participation in the exposition, there are authorized to be appropriated \$20,800,000 to remain available until expended.

Appropriation authorization.

Approved December 29, 1979.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 96-714 (Comm. of Conference).

SENATE REPORT No. 96-369 accompanying S. 1012 (Comm. on Foreign Relations).

CONGRESSIONAL RECORD, Vol. 125 (1979):

Oct. 9, considered and passed House.

Nov. 14, S. 1012 considered in Senate; H.R. 5079 considered and passed Senate, amended, in lieu of S. 1012.

Dec. 20, Senate and House agreed to conference report.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 15, No. 52:

Dec. 31, Presidential statement.

Appendix 2
City Certificate

CERTIFICATE

The undersigned hereby certifies that the City of Knoxville, Tennessee ("City"), through its development agency, Knoxville's Community Development Corporation, is proceeding to acquire the site ("Site") on which the proposed Federal Pavilion is to be located for the Knoxville International Exposition in 1982 ("Expo '82"). As soon as the Site acquisition has been completed, the City will have the ability to convey by deed the Site to the Federal Government in fee simple and free of liens and encumbrances as authorized by Resolution of its City Council by Resolution Nos. 6374-77, R-175-78, R-176-78 and R-18-79 which is hereto attached as an exhibit.* The only consideration on the part of the Federal Government for the conveyance of the Site shall be the Federal Government's commitment to participate in Expo '82.


RANDY FREE
Mayor

*Available upon request from the United States Travel Service, U.S. Department of Commerce, Washington, D.C. 20230

Appendix 3

Interagency Working Group

National Aeronautics and Space Administration
National Endowment for the Arts
National Science Foundation
U.S. Department of Agriculture
U.S. Department of Commerce
U.S. Department of Defense
U.S. Department of Energy
U.S. Department of Health and Human Services
U.S. Department of Housing and Urban
Development
U.S. Department of the Interior
U.S. Department of Transportation
U.S. Environmental Protection Agency
U.S. International Communications Agency

Appendix 4

U.S. Pavilion Officers and Staff

Office of the Commissioner General of Section

Joe M. Rodgers	3/81-11/82
Commissioner General and Director	
Chuck Hagel	3/81-9/81
Deputy Commissioner General	
Allen E. Beach	9/80-3/83
Deputy Commissioner General and Field Director	
Kyle Testerman	2/82-11/82
Associate Commissioner General*	
Susan Seguin	3/81-9/81
Secretary	

Exhibits

Emmett Cunningham	12/80-11/82
Design and Exhibits Director	
Mara Yachnin	9/80-9/82
Program Specialist	
Chris Arnold	4/81-1/83
Program Specialist	
Anita Grinvalds	5/81-3/83
Program Specialist	
Peter C. Hinz	8/81-2/83
Program Specialist	
Jim Ogul	10/81-3/83
Program Specialist	

Construction and Maintenance

Frank Weiskopf	5/81-12/82
Pavilion Engineer	
Dewey Smith	9/81-3/83
Facilities And Services Manager	
Marty Cole	5/82-11/82
Guide—Services Aide	

Public Affairs

Brent Bahler	6/80-5/82
Information Officer	
Director of Public Affairs Office	
Ron Eberhardt	9/81-5/82
Special Projects Director	
Patti Wilson**	1/81-3/83
Special Assistant to the U.S. Pavilion Commissioner General for Public Affairs Direction	

Jim Van Slyke	3/82-11/82
Special Events Assistant	
Pat Thomas	8/81-5/82
Information Specialist	
Press	
Terri Gallu	2/82-12/82
Clerical and Press Aide	
Bob Dinwiddie	5/82-11/82
Guide—Scheduling Aide	

Administration

Sandy Libby	11/80-3/83
Administrative Officer	
Bill Jordan	4/81-3/83
Budget and Fiscal Analyst, Office Manager	

Karla Rhodes	5/81-9/82
Administrative Services Technician	
Susan Carroll***	5/81-9/82
Secretary, Administrative Assistant	
Merrender Quicksey	6/81-9/82
Administrative Assistant	
Shirley Gray	6/81-3/82
Secretary, Administrative Assistant	

Clerical Staff

Elizabeth Faulkner	12/80-11/82
Helen Frazer	4/81-2/82
Wanda Sims	8/81-2/82
Jane Park	1/82-12/82
Joy Kakac	2/82-11/82
Sidney Jeffers	
Consultant	

* Honorary

** Transferred from Office of U.S. Commissioner General

*** Transferred to Office of U.S. Commissioner General



Certificates being presented to staff and guides by U.S. Pavilion Deputy Commissioner General.



Appendix 5

Principal Contractors for Personnel and Services

Guides

University of Tennessee
Supervisor: Diane Cudahy
(See Guide List)

Theatre and Souvenir Counter
Alabama Space and Rocket Center
Supervisor: Don Neville
(See Guide and Staff List)

Computer-Video Equipment Maintenance
New England Technology Group
Supervisor: Stan Shurygailo

Security

Wackenhut Company
Supervisors: Jim Marshall
John Seay
Jimmie Sharpe
(See Officers List.)

Cleaning and Maintenance
Rolen-Rolen and Associates, Inc.
Supervisor: Bill Rolen

Photographers

John R. King
Thom R. King

Donated Operations and Personnel Services

Commissioner General's Lounge
Philip Morris Incorporated
Supervisor: Mary Lou Schattily
Assistants: Muffett Testerman
Kim Ayers

First Aid Station
Coordinated Hospital Services
Director: Sidney Ray

Pavilion Guides

Lea Adcock
Kevin Aukerman
Kendra Aukerman
Opal Bailey
Jeff Baker
Kayne Beasley
Jack Burdick
Glen Bugos
Bob Burns
David Clary
John Cole
Marty Cole*
Dana Coleman
Caroline Dewhirst
Robert Dinwiddie***
Steve Dylewski
Amanda Easter
Dorraya El-Ashry
Charlie Ferrell
Karen Fly
Mary Jane Forrest
Michelle Fox
Linda Geiss
Julie Gettlefinger
Chris Gonzales
Eve Halsted
Joan Hardy
Linda Herlinger
Lisa Hyatt
Robin Ingle**
David Ivins
Amy Jetton
Mark Jordan
Mark Johnson
Brett Johnson
Rachel Kisber
Theresa Kriegel
Richard Law
Fred Lay
Brett LeSeur
Mary Luther

Philip Marlino
 Robert Marlino
 Chuck Martin
 Sherry Martin
 Cathy Matthews
 Gary Matthews
 Bill Mayfield
 William Moulton
 Steve Muldowney
 David Muldowney
 Laura McCall
 Lee McCampbell
 Steve McKamey
 Denise Ousley
 Vickie Painter
 Ashley Andreson Pizzato
 Tracy Phillips
 David Pollio
 Myke Pratt
 Dawn Pridmore
 David Rayson
 Anne Riordan
 Debbie Ross
 David Scott
 John Seay
 Steve Smith
 Myra Taylor
 Mickey Thomas
 David Van Audenhove
 Rebecca Wallace
 Barry Wallingford
 Jim Walls
 Christine Warrington
 Mark Wise
 James White

- * Assigned to Operations
- ** Assigned to U.S.
 Commissioner General's
 Office
- *** Assigned to PA Office

Theater Guides and Staff

Amy C. Adams
 Richard Angel
 Melinda F. Andrews
 Melanie L. Barker
 Jeffrey M. Bartling
 Elizabeth L. Brown
 Robert J. Bugos
 Yvonne M. Clark
 Susan Craig
 Teresa Crowe
 Elizabeth Cunningham
 Mary Beth Cunningham
 Donna M. Czegledi
 David C. Doyal
 Sean W. Doyle
 Pamela J. Duncan
 William C. Eckert
 Connie Frazer
 Karla S. Galloway
 Ann A. Garst
 Brett Garrett
 Angelia Goodman
 Marvin A. Harrell
 Sharon Harrell
 Jerry W. Haston
 Thomas L. Holliday
 Anna R. Johnson
 Frank S. Johnson, Jr.
 Karen C. Kenney
 Nancy A. King
 Annetta K. Langdon
 Amy C. Longmire
 Kevin Mack
 Julie C. Marcum
 James E. Mathews
 Dennis T. Matthes
 Anita A. Mays
 Cynthia A. Mays
 Laura A. McCall
 Jane V. McDow
 Scott Millar
 Edwin D. Moeland
 Jenny L. Montgomery
 Doris Neville

Diane L. Patton
 David L. Pearson
 Jeff R. Reece
 Jennifer B. Roberts
 Mary E. Ryan
 Christina M. Sanio
 Wilifred L. Sanio
 T. Charles Savas
 Linda M. Schauman
 Tammy L. Schrader
 Mary B. Sharp
 Eddie Siegel
 Evelyn G. Spillers
 Thomas L. Stewart
 Philip Susong
 Harold A. Swan
 Charles R. Thress
 Lisa G. Toot
 Anne E. Williams
 Jaybena R. Williams
 Rebecca A. Wilson
 Susan Wright
 Todd Zepke

Security Officers

Floyd Boring
 Samuel Kaiser
 Marshall Houston
 Samuel Howell
 Lonnie Spillers
 Donald Minier
 Sally Marshall
 Michael Parker

Appendix 6

Club '82 Membership

Clinton Campbell
Knoxville, Tennessee
Roger A. Daley
Knoxville, Tennessee
Dr. William F. Gallivan
Knoxville, Tennessee
H. Pat Wood
Knoxville, Tennessee
F. Rodney Lawler
Knoxville, Tennessee
I. O. Johnson, Jr.
Knoxville, Tennessee
James A. Haslam, II
Knoxville, Tennessee

Lee Congleton
Knoxville, Tennessee
Ralph L. Millet, Jr.
Knoxville, Tennessee
James F. Smith, Jr.
Knoxville, Tennessee
John L. Cummings, Jr.
Nashville, Tennessee
Tom McHugh
Ann Arbor, Michigan
Dr. Edward J. Boling
Knoxville, Tennessee
John T. Lupton
Chattanooga, Tennessee
Larry J. Heard
Knoxville, Tennessee

Robert F. Worthington, Jr.
Knoxville, Tennessee
T. R. Bell
Knoxville, Tennessee
Gustave M. Handly
Lenoir City, Tennessee
James M. Overby
Knoxville, Tennessee
George F. Donovan
Knoxville, Tennessee
John R. King
Kingsport, Tennessee
Ira A. Lipman
Memphis, Tennessee
Jake F. Butcher
Knoxville, Tennessee
Marvin T. Runyon
Smyrna, Tennessee



Diane Cudahy, U.S. Pavilion staff, assists in hosting international guests from the Australian and Italian Pavilions.



Visitors study exhibit of 19th century heating stove.



Visitor touches screen to activate video panel explaining energy needed to produce a product.

Appendix 7

United States Pavilion

Corporate Sponsors

Advanced Electronics Design,
Inc.

Alabama Space & Rocket
Center

American Automobile
Association

American Expo

American Financial Corporation

American Hospital Supply
Corporation

Apple Computer, Inc.

A. T. Cross Company

Blue Coral, Inc.

Brumfield-Gallagher, Inc.

Cedar Crest Boot Company

Collins & Aikman Corporation

Comshare Execuchart Inc.

Coordinated Hospital Services,
Inc.

Corning Glass Works

Corvus Systems, Inc.

Eastern Plastics and

Fabrication, Inc.

Elographics, Inc.

Executone, Inc.

Ficks Reed

General Electric Company

General Motors Corporation

Genesco

Grove Manufacturing Company

Grumman Corporation

Hampton House Studios, Inc.

Harris Corporation

Hyatt Regency Knoxville

Home-Crest Corporation

Interstate Van Lines, Inc.

Ionization Systems, Inc.

Jack Daniel Distillery

Jarman Shoe Company

J. B. Lansing Sound, Inc.

Jet Industries, Inc.

Johnson Controls, Inc.

Kaiser Aluminum & Chemical
Corporation

Kidde, Inc.

Land Design Associates, Inc.

Lenox Crystal

Levolor Lorentzen, Inc.

Levi Strauss & Company

Lunt Silversmiths

Mademoiselle Magazine

Manitowoc Equipment Works

Marantz Company, Inc.

The Martin-Senour Company

Louis M. Martini

McDonald's Corporation

Medifac

Miller Brewing Company

Montgomery Elevator Company

National Association of

Advertising Publishers

Notifier Company

Open Plan Accessories, Inc.

Joe Parrot Screen Printing, Inc.

Perma Power Electronics, Inc.

Philip Morris Incorporated

Pickard Incorporated

Polaroid Corporation

Printing Industries of the South

Red Devil, Inc.

Renfield Imports, Ltd.

Republic Steel Corporation

Rockwell International

Rohm and Haas Company

Samsonite Contract Furniture

Seven-Up Company

ShowAmerica, Inc.

Sonics Associates, Inc.

Sony Corporation of America

Sunbeam Appliance Company

Temperature Control, Inc.

Tennessee Nurserymen's

Association

Texaco, Inc.

3M Company

United Textile Workers of

America

Vivar, Inc.

Walpole's

Wente Bros.

Westinghouse Electric

Corporation

White-Westinghouse Appliance

Company

Wm. Hobbs, Ltd.

Zippo Manufacturing Company

Appendix 8

Artifact Lenders

Aerospace Research Corporation
Alabama Space & Rocket Center
American Can Company
Battelle Pacific Northwest Laboratories
Bethlehem Steel Corporation
California Raisin Advisory Board
Carter Mining Company
Chicago Historical Society
Consolidation Coal
Core Laboratories
Corning Glass Works
Duro Test Corporation
Durward R. Center
East Tennessee Natural Gas Company
Eneritech
Bob Gallagher
General Motors Corporation
General Shale Products Corporation
Glazer Steel Corporation
Glen-Gery Corporation
Georgia Agrirama—The State Museum of Agriculture, Tifton, Georgia
Goodyear Tire and Rubber Company
Gordon St. Claire Dickerson
Graybar Electric Company
Robert E. Green
Grumman Corporation
Henry Ford Museum & Greenfield Village, Dearborn, Michigan
Hobie Cat Company
Hughes Aircraft Museum
Hughes Tool Company
IBM

Island Creek Coal Company
Joy Machinery Company
Kerr-McGee Corporation
Keystone Consolidated Industries
Michael D. Korolenko, Korry Productions
Knoll International
Land Between the Lakes, TVA
Lava-Simplex International
James Leffel and Company
Let There Be Neon
Lone Star Industries
Lowe's of Knoxville
Miller's Department Store
Montgomery Ward & Company, Inc.
National Coal Association
National Museum of American History, Smithsonian Institution
William J. Notto
Peabody Family
Seiscom Delta
Solar Energy Research Institute
Solarex Corporation
Solar Kinetics, Inc.
Southwest Museum of Science & Technology—The Science Place
Suzanne Lipschutz, Second Hand Rose, N.Y.
TVA—Land Between the Lakes
Tennessee Farmers Co-Op
Texas A and M University
Tokheim Corporation
Tosco Corporation
Tri-County Oil Company
Union Oil Company
University of Idaho
Jerry Valenta & Sons Inc.
Vermont Castings, Inc.
Peter M. Warner
Westinghouse Electric Corporation
Westvaco

Appendix 9

Photo Credits

Aero Vieroument Inc.
AGA Corporation
Allied Corporation
Aluminum Association
American Airlines
American Gas Association
American Iron and Steel Institute
American Institute of Architects
American Petroleum Institute
American President Lines
Atchison, Topeka and Santa Fe Railroad Company
Atlantic Richfield Company
Atomic Industrial Forum
Bob Bailey Studios
Bettman Archive
Jonathon Blair
Boeing Company
Brookhaven National Laboratory
Brown Brothers
Bucyrus-Erie Company
Burlington Industries, Inc.
California Office of the State Architect
Don Carstens
CEI, Raymond Lowery
Celanese Corporation
Center for Renewable Resources
Chessie System Railroads
Clinch River Breeder Reactor
Council Pipeline Company
Consolidated Edison Company of New York, Inc.
Consumers Power Company
Corning Glass Works
Ronald Corso
Crosbyton Solar Power Project
Cromwell, Truemper, Levy, Parker and Woodsmall, Inc.
Bruce Dale/National Geographic Society
Denver Public Library; Western History Department

Perry Duis
 E G & G Inc.
 Electric Power Research
 Institute
 Ellerbe Associates, Inc.
 El Paso Company
 Ernest Franzgrote
 Henry Ford Museum &
 Greenfield Village, Dearborn,
 Michigan
 Freelance Photographers Guild,
 Inc.
 Gas Research Institute
 General Electric Company
 General Foods Corporation
 General Montgomery Meigs,
 U.S.A.
 General Motors Corporation
 Goodyear Tire and Rubber
 Company
 Grumman Corporation
 Hausman Bus Sales
 Heery & Heery, Architects and
 Engineers
 Brian Horrigan
 Greg Hursley
 IBM
 Image Bank
 James Leffell and Company
 Johnson/Burghee Architects
 Cathy Kelly
 Michael D. Korolenko, Korry
 Productions
 Lear Avia Corporation
 Library of Congress
 Lorenz and Williams
 Martin Marietta Corporation
 Chris McQueen
 Merrimack Valley Textile
 Museum
 Metropolitan Edison Company
 Meyers and Bennett/BRW
 Architect
 Modern Plastics Magazine,
 McGraw-Hill, Inc.
 Moore Grover Harper

Museum of the City of New
 York, Byron Collection
 National Aeronautics and Space
 Administration
 National Archives and Records
 Services, Washington, D.C.
 National Coal Association
 National Museum of American
 History, Smithsonian
 Institution
 National Sunflower Association
 NKK America
 New York Historical Society,
 New York City
 Occidental Petroleum
 Corporation
 Old Sturbridge Village
 Palmer/Kane Inc.
 Peale Museum, Baltimore,
 Maryland
 Phillips Petroleum Company
 Public Service Electric & Gas
 Company
 Railroader's Memorial Museum,
 Inc., Altoona, Pennsylvania
 Franklin D. Roosevelt Library
 Rondal Partridge
 Rowe Holmes Associates

Scribe Publishing Corporation
 Ted Spiegel
 Standard Oil Company
 Sun Transport, Inc.
 Taft Museum, Cincinnati, Ohio
 Texaco
 Tosco Corporation
 Union Oil Company of
 California
 University of Virginia
 U.S. Department of Agriculture
 U.S. Department of Energy
 U.S. Department of
 Transportation
 U.S. Windpower, Inc.
 Peter M. Warner
 Harry Weese, Associates
 Westinghouse Historical
 Collection
 Westvaco
 Wind Ship Development
 Corporation
 Woodfin Camp Inc.
 Woodward & Lothrop
 W. R. Grace and Company

Photo courtesy of Preston G. Haag, Jr.



Appendix 10

Computer Video Credits

AGA Corporation
Aluminum Association
American Gas Association
American Enterprise Institute
American Textile Manufacturers Institute
Americans for Energy Independence
Atomic Industrial Forum
Barr Films
Battelle Pacific Northwest Laboratories
Bethlehem Steel
BFA Educational Media
B. C. Hydro
Blackwood Productions
BP North America—Index Film and Television Library LTD
Brookhaven National Laboratory
Brooklyn Union Gas
Bullfrog Films
C-E Power Systems
Charles County Community College
Churchill Films
Colorado University
Colorado State University
Conoco, Inc.
Consolidation Coal
Consumer Power Company

Coronet Films
Creative Venture Films
CTV Television Network Ltd.
Department of Agriculture
Department of Energy
Department of Transportation
Direct Cinema
Walt Disney
Telecommunications Document Associates
Duro-Test Corporation
Educational Materials & Co.
Electric Council of New England
Electric Power Research Institute
Encyclopedia Britannica
Envision Corp.
Exxon Corporation
Stuart Finley Inc.
Firestone Tire & Rubber Co.
General Foods Corporation
George Ancona
Georgia Power Company
Gibbs & Hill Inc.
Glen-Gery Corp.
Goodyear Tire & Rubber Co.
Green Mountain Post Films
Sherman Grinberg Film Libraries
Hobie Cat Company
Indiana University
International Association of Machinists and Aerospace Workers

International Film Bureau
Kai Dib Films International
Kaiser Aluminum
KPBS-TV
KPHO-TV
KSTW-TV
Lawrence Livermore National Laboratory
League of Women Voters
Magic Lantern
Ralph Nader (Amy Keolbel)
NASA
National Coal Association
National Conservation Foundation
National Film Board of Canada
National Geographic Society
New Hampshire Voices for Energy
Oak Ridge National Laboratory
Phillips Petroleum Co.
Portland Cement Association
Public Service Electric & Gas Co.
Ramsgate Films
James L. Ruhl & Associates
Science & Mankind Inc.
Shell Film Library
Solar Energy Research Institute
Solar Lobby
Southern California Edison Company
Steuben Glass
Tennessee Valley Authority
Time Life Video
Underwood, Jordan Associates
United Nations
U.S. Navy Office of Information
Valero Energy Corp.
Western Electric
Westinghouse Corporation
Westvaco
WGBH-TV
WGGB-TV
WIFT-TV
WNET-TV
WTBS-TV

Commissioner General Lu of the Chinese Pavilion points out feature on the U.S. Pavilion's energy supply and demand diagram to Chinese delegation.



Appendix 11

Corporate Recognition Days

May 6,7	Apple Computer
May 8	Executone Corporation
May 10	Red Devil, Inc.
May 11	Johnson Control, Inc.
May 13	A. T. Cross Company
May 15,16	Interstate Van Lines
May 25	Coordinated Hospital Services
May 28	Land Design Associates
May 29	Texaco Inc.
May 30	Blue Coral, Inc.
June 7	J. B. Lansing Sound, Inc.
June 12	Levi Straus & Company
June 13	Miller Brewing Company
June 23	Advanced Electronics Design, Inc.
June 25	Oak Ridge Associated Universities
July 11	Elographics, Inc.
July 20	Alabama Space & Rocket Center
July 29	Sony Corporation of America
July 31	Temperature Control, Inc.
Sept. 11	William Hobbs, Ltd.
Sept. 26	Samsonite, Inc.
Sept. 30	Grumman Corporation
Oct. 3	Brumfield-Gallagher, Inc.
Oct. 7	Manitowac Equipment Works
Oct. 9	Tennessee Nurserymen's Association



Appendix 12

Contributors to U.S. National Week

Tommy Walker Productions
Brumfield-Gallagher, Inc.
Carl Lindner—American Financial Corporation



U.S. Pavilion staff hosts reception for Australian staff honoring Australia. Deputy Commissioner General John Maddern and Mrs. Maddern (9th and 10th from left, standing). Francis Thompson (far left, kneeling) and Bayley Silleck (far left standing), "Energy Energy" film producers, joined the event.



Guests arrive for U.S. Pavilion weekly "International" luncheon. John Maddern, Deputy Commissioner General, Australian Pavilion (2nd from right).

The Lord Mayor of London, Sir Christopher Leaver, tries his hand at the piano in the lounge during his and Lady Leaver's visit to the U.S. Pavilion.

Appendix 13

Contractors for the U.S. Pavilion and Exhibits

Design and Construction

Pavilion Concept

Haworth and Anderson, Inc.
Washington, D.C.
Cooper-Lecky Partnership
Washington, D.C.

Architect
FABRAP Architects, Inc.
FABRAP/LETCO
Atlanta, Georgia

Associated Architects
Lindsay and Maples Architects, Inc.
Knoxville, Tennessee

Structural Engineer
O'Kon and Company
Atlanta, Georgia

Landscape Architects
Bill Oliphant and Associates, Inc.
Atlanta, Georgia

Korean Pavilion attendants await
arrival of official party to open special
Korean stamp exhibit at Pavilion West Plaza.



Theater Design Consultant
Will Szabo Associates, Ltd.
New Rochelle, New York

Construction Management
Rentenbach Engineering
Knoxville, Tennessee

Landscaping
Hickory Construction
Knoxville, Tennessee

Film

Production
Francis Thompson, Inc.
New York, New York

Exhibits

Design
Carlos Ramirez & Albert H. Woods, Inc.
New York, New York

Computer Software and Systems Design
New England Technology Group
Salem, Massachusetts

Live Energy Show
Oak Ridge Associates Universities
Oak Ridge, Tennessee

Fabrication and Installation
Design and Production, Inc.
Alexandria, Virginia

USA Day

Rocket Belt Pilot
Clyde Baldshun Assoc.
Woodland Hills, Calif.

Appendix 14

West Plaza Entertainment

Brigham Young Ambassadors
Diana Warwick
Army Tradoc Stage Band
Hamilton High School Singers
Abraham Baldwin College Band and Chorus
Fort Ustis Drill Team
Sound Foundations
Wateseka Sensations
Sho-Sei-Kai Koto Group from Japan
The Expressions—Buffalo Grove High School
The Natural High Singers—Lake Wells High School



The Sounds of Sun
Maxwell Air Force Jazz Band
Palmetto State Cloggers-Columbia, S.C.
Jebry Lee Briley
Washburn University Singers
The Minnesingers
Ralph Case Cloggers & Case Brothers Band
572nd Air Force Jazz Band
Drury High School Jazz Band
Lower Columbia Singers—Washington State
Tennessee Half-Pints with the Morristown
County Cloggers
First United Methodist Youth Choir
Tuckertown Cloggers
Duluth Cloggers
Myles Caskie's Mimes & Clowns from Canada
Knoxville College—Musical Memoirs
U.S. Cheerleaders Association—National
Grand Champions
82nd Airborne Band and Chorus
General Assembly Chorus
Countrytime Cloggers
Caboose Cloggers
U.S. Army Field Band and Chorus
Georgetown Highsteppers—National Champion
High School Dance Line
Mississippi State Madrigal Singers
The Madisonians—James Madison University
Crabmeat Thompson
Star Family Singers
Premier Band
U.S. Naval Academy Dixieland Band
Mont Clair High School Concert Band
Carson Newman College Men's Chorus
Philippine Madrigal Singers
London County Senior Citizens Kitchen Band
530th Air Force National Guard Band
Starlite Cloggers
Morris Dancers—Berea College
Maxwell Airs Air force Jazz Ensemble
Cleveland St. Youth Players
United States Association of Independent
Gymnastic Clubs

The United States Association of Independent
Gymnastics Clubs Performers at the United
States Pavilion

Gymnastics Plus, Columbus, GA
Gymscamps of Florence, Florence, SC

Salem Gymnastics Center, Winston/Salem, NC
Camp Chattooga Gymnastics, Marietta, GA
Cedar Hill Gym Center, Cedar Hill, TX
Ponies Gym Team, Hume, VA
Maverick Gym Club, Charleston, WV
Mile High Twisters, Cranford, NJ
Gymnastic Academy of Boston, Norwood, MA
Olympiad Gymnastic Club, Wilmington, DE
Bloomington-Normal Gym Center,
Bloomington, IL
Signal School Of Physical Education, Signal
Mountain, TN
First State Sch. of Gymnastics, Wilmington, DE
Lake Gymnastic Center, Parsippany, NJ
Gymnastics World, Broadview Heights, OH
Giguere Gymnastic Exhibition Team, Cherry
Valley, MA
Gymnastics Chalet; Norman, OK
Alt's Gymnastics School, Aberdeen, NJ
Keystone Gymnastics, Mechanicsburg, PA
Galesburg Gymnastic Club, Galesburg, IL
Gymn. Acad. of Boston, Norwood, MA
Richmond Olympiad, Richmond, VA
American Turners, Algonquin, IL
Royal T's, Crofton, MD
Ski-Lan Performing Arts, Rutland, VT
SPECS Gymnastics Club, McLean, VA
Triple City Stars, Vestal, NY
John Pancott Sch. of Gymn., Malvern, PA
Gymstrada Schools, Virginia Beach, VA
Wayne's Angels, Pinson, AL
Gemini Gymnastics, Altoona, PA
Greenville YWCA, Greenville, SC
Jewarts Gymnastics, Pittsburgh, PA
Terryette Gymn. Club, Milford, CT
Angela's Angels, Gaffney, SC
Dayton Academy of Gymn., Dayton, OH
Liberty Belles Gymn. Club, Philadelphia, PA
World of Sports Instruction, New Port Richey, FL
Gymnastics, Ltd., Dayton, OH
Springfield Gymn. Center, Springfield, MO
Gymnastic Spectrum, Davenport, IA
Stars Gymnastics Academy, Cedar Rapids, IA
Gym Elite Gymnastics Training Cntr., Norcross,
GA

Appendix 15

Pavilion Fact Sheet

I. Dimensions

A. Height

1. Lowest exhibit level to top of cage steel 124'-6-1/2"
2. Main concourse to top of cage steel 112'-0-1/2"
3. Main concourse to roof slab 75'-0"
4. Interior—main exhibit floor to highest interior point 94'-3-1/8"

B. Length

1. Overall East/West Cage 417'-10-1/2'
2. Overall North/South 145'-3-1/8"
3. Theatre—overall East/West 135'-0"
- overall North/South 113'-2"
4. Interior—main exhibit space—East/West 327'-0"
- main exhibit space—North/South 112'-6"

II. Areas

(Interior Environmentally Controlled)

A. Exhibit	41,885 SF
B. Theatre (including lobby)	21,000 SF
C. Support Areas	24,530 SF
D. Total Interior Area	87,335 SF

III. Conveying Systems

Length of longest escalator—65 Ft. (17 Mtrs.)

1. Travels 90 Ft. per minute (27.3 Mtrs. per minute)
2. Each unit carries a maximum of 5,000 people per hour
3. 2 parallel escalators, thus 10,000 people per hour

IV. Theatre

Capacity Seating—Approximately 1,000

V. Solar Panels on Roof

4,100 Sq. Ft. or 381 Sq. Mtrs. of solar collector area

Appendix 16

Budget/Summary/Cost Center (12/31/82)

United States Participation

Cost Center	Approved Budget FPII	Obligations To Date	Estimated Cost FPVI	Projected Final Balance
Admin & OPS	\$ 2,450,928	\$ 1,631,679	\$ 1,835,827 8.8%	615,101
Pav. & Const.	\$12,748,910	\$12,941,253	\$12,946,370 62.3%	(197,460)
U.S.C.G.	\$ 415,219	\$ 397,506	\$ 417,085 2.0%	(1,866)
Exhibits	\$ 3,901,115	\$ 3,920,362	\$ 3,931,540 18.9%	(30,425)
Film	\$ 1,175,000	\$ 1,013,000	\$ 1,015,000 4.9%	160,000
C.G.S.	\$ 108,828	\$ 326,317	\$ 340,872 1.6%	(232,044)
Reserve			\$ 313,306 1.5%	(313,306)
TOTAL	\$20,800,000	\$20,230,017	\$20,800,000	—0—

Appendix 16 (cont.)

Budget/Summary/ Cost Category (12/31/82)
United States Participation

Cost Category	Description	Approved Budget-FP II	Obligations To Date	Estimated Cost-FP VI	Projected Final Balance
10/11	Per Comp	\$ 1,451,668	\$ 1,242,577	\$ 1,286,750 6.2%	164,918
12	Per Ben	145,055	115,656	119,809 0.6%	25,246
21	Travel	198,900	203,439	217,160 1.0%	(18,260)
22	Trans Things	61,975	10,162	19,277 0.1%	42,698
23	Rent,Com,Ut	398,614	298,588	368,642 1.8%	29,972
24	Printing	50,391	58,610	82,457 0.4%	(32,066)
25	Other Services	18,080,553	18,228,700	18,294,165 87.9%	(213,612)
26	Supp. & Mat.	47,300	39,164	40,585 0.2%	6,715
31	Equipment	105,050	33,121	57,849 0.3%	47,201
80	Working Capital Fund Payment	146,825	—0—	—0—	146,825
	Reserve	113,669	—0—	313,306 1.5%	(199,637)
TOTAL		\$20,800,000	\$20,230,017	\$20,800,000	—0—



U.S. Pavilion staff gather for final staff meeting on Closing Day.

Appendix 17 (Sample Schedule of Events)

Daily Schedule of Events for Wednesday, June 16, 1982

- 10:15 a.m. — Motorcade carrying Australian government dignitaries arrives at Pavilion service-gate. Party proceeds directly to Tennessee Amphitheatre.
 - 10:30 a.m. — Camp Chattooga Gymnastics on West Plaza.
 - 11:00 a.m. — Mr. L. W. Zinski and party arrive for a tour of the Pavilion. They should be directed to the VIP lounge, and given a tour by press aide.
 - 12:00 noon — BYU Young Ambassadors on West Plaza.
 - 1:00 p.m. — Mr. Jim Welch and a party of 4 arrive for a tour of the Pavilion. They should be directed to the 6th floor.
 - 2:00 p.m. — BYU Young Ambassadors on West Plaza.
 - 2:00 p.m. — Mr. Gene Heller and a party of 4 arrive to tour U.S. Pavilion. They are with the Grumman Corp.
 - 2:30 p.m. — Limousine pick-up. USA will be dispatched to Island Airport to meet Alabama Space and Rocket officials.
 - 2:40 p.m. — Commissioner General Joe Rodgers, Mrs. Rodgers, and Mr. and Mrs. Frederick Grawert arrive at Island Airport. USA-1 will be dispatched with special driver to meet.
 - 3:00 p.m. — Mr. Brookhart and a party of 18 from Rotary International will arrive for a tour, and a visit to the VIP lounge.
 - 3:00 p.m. — BYU Young Ambassadors on West Plaza.
 - 4:00 p.m. — BYU Young Ambassadors on West Plaza.
 - 7:00 p.m. — Camp Chattooga Gymnastics on West Plaza.
- Carol and Tom Barnette will also be arriving today for a tour. They should be directed to the VIP lounge.

Appendix 18

Pre-Fair Chronological Summary

1976

- Aug 28 U.S. Department of Commerce endorses Expo '82 plan.
- Nov 28 The BIE accepts KIEE's plan for World's Fair in Knoxville in 1982.
- Dec Consultants contracted to prepare Environmental Impact Statement for Knoxville exposition.

1977

- Mar 25 Application for Expo '82 in Knoxville approved by DOC and forwarded to the president by the Secretary of Commerce.
- March 15 Final Environmental Impact Statement (FEIS) published.
- Apr 26 President recognizes Expo '82 as being in the National Interest.
- Apr 27 BIE gives official date approval and registers Expo '82.

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- May/June Interagency Working Group (IAWG) formed.
Aug 26 Contractor selected to develop U.S. Pavilion theme.
Sept 2 Architectural firm selected to assist with selection of design team.

1978

- Feb 15 Consultants complete theme development statement for U.S. Pavilion.
Mar 10 Department of Energy approves theme for Federal Pavilion.
June 1 Expositions Staff reestimates budget for U.S. Pavilion and Commissioner General.
Nov 1 DOC team meets in Knoxville with BIE President and French delegate to review documents required by BIE, also review project's financial status and plans. Progress sufficient for recommendation from Secretary to President for issuance of invitations Proclamation.
Dec 1 President issues invitations to foreign nations to participate in Expo '82.
Dec 12 U.S. Pavilion Design solicited by advertisement in Commerce Business Daily.
Dec 29 Public Law 96-169 was enacted to provide for United States participation in the Knoxville International Energy Exposition in Knoxville, Tennessee in 1982. This law authorized the President, by and with the advice and consent of the Senate, to appoint a Commissioner General of the United States for Energy Expo '82. It also provided for the Secretary of Commerce to designate a Commissioner General of Section, who would serve as the Director of the United States Pavilion.

1979

- Feb 2 Five finalists for U.S. Pavilion design chosen by Architect/Engineer Evaluation Board.
May 2 An eleven-member inter-agency design and architect selection board appointed.
May 11 DOC/OBPA budget of \$24.3 million for Federal participation in Expo '82 sent to OMB.
June 11 Supplement to the FEIS completed by consultant and comments invited.
June 28 Selection of U.S. Pavilion architect, exhibit designer, and film producer.
Aug 9 Comments and responses to FEIS published by consultant.
Aug 17 President signs U.S. Participation Plan for Expo '82.
Aug 27 U.S. Participation Plan in Expo '82 submitted to Congress.
Aug 28 President publicly announces U.S. Participation Plan in Expo '82.

1980

- Feb 1 Letter agreement signed with architect of Pavilion for continuing preliminary design work.
July 8 Public Law 96-304 enacted, authorizing \$20,800,000 for designing, constructing and operating a Federal Pavilion in the Knoxville International Energy Exposition.
July 29 Appropriation approved.
Aug 1 Letter contract sign for IMAX film producer.
Aug 29 Real estate closing for U.S. Pavilion site in Knoxville.
Sept 2 Letter contract signed with exhibit designer.

- Sept 5 Title to land for United States Pavilion cleared and transferred. Signing of indemnity agreement with KIEE, and the City of Knoxville, and Knoxville's Community Development Corporation.
- Oct 20 Letter contract signed for construction management.
- Oct 23 Groundbreaking for United States Pavilion.

1981

- June 18 Fixed price contract signed with film producer for the production of an IMAX film for \$1,225,000.
- Aug 18 Pre-bid meeting with potential exhibit fabricators.
- Sept 10 Exhibit fabrication bid deadline.
- Oct 22 U.S. Pavilion Topping Out Ceremony.
- Nov 2 Contract for exhibit fabrication signed for \$1,079,000 for 80% of exhibit fabrication.



Photo courtesy of Region of Nashville, TN

All U.S. Pavilion staff contributed to this report, which was organized and compiled by Allen E. Beach and Anita Grinvalds, assisted by Shirley Gray and Sharon Wells.

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